

**Patent Law for Engineers and Scientists**  
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**Lecture – 08**  
**Patentability of Inventions**  
**Inventions not Patentable**

Inventions not patentable, the patents act gives a list of inventions or rather it gives a list of things that will not amount to an invention.

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**Inventions not Patentable**

- SS 3&4 provides for exceptions to patentability, statutory exceptions
- S. 3 provides for an exhaustive list of items that cannot be classified as inventions



Now, these are seen as at one level these are seen as exceptions to patentability, these are statutory exceptions we call them statutory because they have been introduced by the patents act and they are exceptions because the act says that the following are not inventions within the meaning of the act; and when we say inventions we are referring to inventions that cannot be patented.

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## What are not Patentable?

- Frivolous Inventions and Inventions Contrary to Natural Laws: Section 3(a)
  - Perpetual motion machine
- Inventions Contrary to Public Order or Morality: S. 3(b)
  - Case: Harvard Onco-mouse
  - Prejudice to life, health or environment



Now 3 a talks about an invention, which is frivolous or which claims anything; obviously contrary to well established natural laws. So, if there is an invention that is contrary to the laws of thermodynamics for instance perpetual motion machine would be contrary to the laws of thermodynamics, those inventions will be regarded as contrary to the well established natural laws and will not be granted a patent. So, anything that contravenes and well established natural law will not be deemed to be an invention under the meaning of the act. 3 b talks about 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 to the environment. Now this exception includes things that the use of which could be contrary to public order or morality.

The public order on morality is defined in a very broadway in some jurisdictions, it could include even genetically modified animals. For instance the Harvard Onco-mouse was granted patent in the United States, the United States patent office granted patent on the Harvard Onco-mouse which is a mouse which has a gene that is susceptible to cancer this mouse could be used for various testing various cancer drugs. So, they develop mice or a mouse with this particular gene. Though the US patent granted patent for the Harvard Onco-mouse, the European patent office rejected the patent. So, you find that

jurisdictions and in fact, the rejection from the European patent office was based on similar ground which prohibited granting of inventions that are contrary to public order or morality.

Similarly, inventions that costs prejudice to human animal or plant life for health or to the environment would also come under this. So, if there is an invention that can cause mass destruction it could be captured under this because that can be regarded as something that could seriously prejudice human animal plant life or health or to the environment. Also the classic example that you will find in various patent treatises is the one of the guillotine, the guillotine was used in Europe for executing human beings. So, this was something which was regarded as prejudicial to human life and instruments like the guillotine will not be granted patent.

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## What are not Patentable?

- Discovery not an Invention: S. 3(c)
  - Scientific principle;
  - Artificially synthesized substances—could be subject matter
- S. 3(d)
  - Mere discovery of new form of known substance—no enhanced efficacy



3 c talks about the mere discovery of a scientific principle or the formulation of an abstract theory or discovery of any living thing or nonliving substance occurring in nature. All discoveries are not patentable, now the discovery if it pertains to a scientific principle or the formulation of an abstract theory say the theory of relativity or the principle in science which is well established, the mere discovery of that principle or formulation of a theory will not constitute an invention. We had seen earlier that for

something to be an invention it should manifest itself in the form of a product or a process, these are the two categories of things for which patents can be granted.

Scientific principle and a theory remains articulation of a way in which something works, it does not necessarily encompass a product or a process for the purposes of the patents act. In addition to the discovery of a scientific theory principle or an abstract theory, the discovery of any living or nonliving substance occurring in nature cannot be the subject matter of a patent. So, anything that exist in nature be it living or materials substances cannot be the subject matter of a patent.

Artificially synthesized substances could be a subject matter of a patent. Section 3 d talks about a certain kinds of substances and processes which will not be granted patent. Now section 3 d comprises of 3 parts, the first part says that the mere discovery of a new form of a known substance which does not result in the enhancement of the no efficacy of that substance will not be regarded as an invention. Now what is not an invention was the statement with which section 3 begins; this means if there is an existing substance and a new form of that substance is subsequently discovered.

The fact that the new form is discovered which relates to the known substance will not be granted a fresh lease of life in the form of a fresh patent unless the patent applicant is able to demonstrate an enhancement of the known efficacy of that substance, which means the new substance or the new form of the known substance should now have an efficacy effectiveness; whatever be it because in the case of drugs are now the courts of held that it has to be therapeutic efficacy in the case of pesticides, it could be the efficacy in terms of its effect on pest, if it is a weedisite it could be the efficacy in terms of killing the weeds.

So, we understand efficacy of substances as how effective they are for the purpose for which they are used. So, the new form of the known substance has to have a better efficacy. Now the better efficacy should be what the act says, it should be an enhancement of what is already known. So, this tells us that when a new form of a known substance is file in a patent application. The patent applicant will have to demonstrate what was the known efficacy of that substance and to what extend the new

form shows an enhancement of the efficacy. Now this has to be done and this has to be demonstrated in the patent application. Largely by way of some experimental tests and there has to be some kind of data we have seen the patent office decisions, where they insist on some kind of data to demonstrate this enhancement of known efficacy.

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## What are not Patentable?

- S. 3(d)
  - 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.



Now, what are the new forms of known substance? The explanation gives us a much better understanding of that, the explanation says for the purposes of this clause, salts, esters, ethers, polymorphs, metabolites, pure form, particle size, isomers, mixture of isomers, complexes, combinations and other derivatives of non substances shall be considered to be the same substance. So, the salt of a substance will be considered to be the same substance, the ester form of a substance will be regarded as the same, ether form, polymorph, metabolite, particle size they will all be regarded as the same substance unless they differ significantly in properties with regard to efficacy.

Now, you can only claim a patent for a salt or an ester or an ether or something which is already known if you are able to demonstrate that the efficacy of the new form is significantly different. Now the language used in the explanation is they differ significantly in properties with regard to; significant difference has to be demonstrated by comparing the known efficacy by known efficacy we are referring to the efficacy of

the known substance, and mind you this explanation pertains to specifically to the new form of the known substance.

So, there is an existing form of the known substance and the existing forms has an efficacy, let us call it x. The new form of the known substance should have a different efficacy let us say it is y. Now y minus x should be something that is significantly different the difference has to be significant. In some cases there have been proof of efficacy comes with quite a lot of intricate details, in some cases the patent applicants have tried to show that bio availability or increase in bio availability could be one of the characteristics for proving enhancement of efficacy.

In other cases patent applicants have tried to show a stability of the substance, better flow properties, and ease of use as properties that could demonstrate enhancement of efficacy. So, we have quite a lot of patent office practice on this, there are decisions of the patent office which give the details of how it regards enhancement of efficacy, how efficacy has to be proved and what kind of data the patent office expects for proving efficacy.

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## What are not Patentable?

- S. 3(d)
  - Mere discovery of any new property or new use for a known substance
  - Mere use of a known process, machine or apparatus unless—results in a new product or employs at least one new reactant



Now, the second part of 3 d states that the mere discovery of any new property or new

use of a known substance shall not be an invention. Of this is a blanket ban in the earlier part the first part we saw that the new form of a known substance will not normally be considered for a patent, but if you demonstrate efficacy enhanced efficacy it would qualify for a patent. So, there was a threshold which could be crossed and we can call that there was a hurdle which was capable of being crossed. So, that was a conditional exception, a new form will not be regarded as patentable, but upon demonstration of enhanced efficacy it would become patentable.

The second part does not have any such way to get a patent, in other words it is a kind of a blanket ban. It discovery of a new property or new use of a known substance will not be treated as an invention. So, there is no way you can get over and claim a patent if you are come up with the new use or a new property.

Now what could be the justification for this? One justification for this blanket ban can be found in section 48 which describes the rights of a patentee. When a patent is granted under section 48 there are a set of rights that approves on the patentee, one of the right is the right to use. So, if the right to use is already granted for the known substance, a new use of the known substance should not be granted based on that logic for the mere fact that a new use was discovered, but the substance still remains the same.

So, it pertains to an existing substance what the patent t had only discovered was a new use of that substance. So, there was no technological contribution by the invention, it was just a discovery of what the invention could already do by the patent applicant. So, the new use was already there it just came to the knowledge of the applicant by some experimentation of by testing. So, since use is one of the rights that is granted along with the patent at the first instance, new use will not be granted or fresh release of patent life. Similarly new property also pertains to something which was inherent in the known substance; it was only discovered by the applicant. So, the discovery of something which is inherent like a new use or a new property which does not contribute anything new to the substance itself will not be regarded as a invention.

The third part of section 3 d states that the mere use of a known process machine or apparatus unless such known process results in a new product or employees at least one

new reactant, it will not be regarded as an invention. So, the use of a known process the earlier part pertains to use of a known substance in this case its use of a known process machine or apparatus. Now using a known process machine or apparatus will not qualify for the grant of a fresh patent because the use of the process is already known or the machine or the apparatus is already known, but if the known process result in a new product then that particular case could qualify for a fresh patent or if a employees at least one new reactant again in that case the use of a known process could be regarded as being the subject matter of a separate patent.

Now, we do not have a very clear articulation of how this clause can be instrumental in getting a patent and we have not come across any detailed discussion either by the patent office or guidelines issued by the patent office showing how this provision shall be put into operation.

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## What are not Patentable?

- Admixture: S 3(e)
  - Aggregation of properties of the component
  - Process of producing such substance
- Inventions Pertaining to Arrangement: S 3(f)
  - Workshop improvements
  - Combination of known integers
- Method of Testing: S. 3 (g)
  - Omitted



Then we have section 3 e, now we are still on the exceptions we are on what are not inventions. A substance obtained by the mere admixture resulting only in the aggregation of properties of the components there are or a process for producing that substance. Now if you mix 2 or 3 known substances and the aggregation of the properties are just it is a combination of their existing property, then that substance which results from the



mixture of 2 or 3 other substances will not be granted a patent. Well the logic is quite simple if you look at pharmaceuticals pharmaceutical compositions constantly combine existing or known drugs.

Now, lactobacillus could be combined with an antibiotic and antipyretic could be combined with an anti inflammatory drug, you have various combinations coming out all the time. Now this provision allows combinations to be made, but not to be monopolized. So, you could have combinations you could have admixtures, and if the admixtures just result in the aggregation of their individual properties, then there is no need for a fresh grant of a patentee life.

However there could be cases where the admixture result not only in the aggregation of properties, but it also results in something additional to the aggregation of properties what we call it could result in an synergy it could result in a synergistic effect. Synergistic effect in common parlance is where 2 plus 2 makes 5. Now in those cases where the synergistic effect is unexpected and the effect is not expected as a mere aggregation of the individual properties, in such cases you could claim the synergistic effect and that could be the subject matter of a patent. So, the patent office manual does not describe that mere admixtures are not normally granted a patent, but in cases where they result in a synergistic effect that could be the subject matter of a patent.

Section 3 f states that the mere arrangement or rearrangement or duplication of known devices each functioning independently of one another in a known way cannot be an invention. Now this is unexpected lines because the fact that few devices mechanical or even other devices that could be arranged or rearranged in such a way that they all function independently of one another in a known way cannot be the subject matter of an invention. If they function inter dependently not independently then that could be the subject matter of a patent in a way which is not expected.

Now we all have a gadgets we all have smart phones which does the job of a music player which does the job of a camera and a small computer screen or television it does multiple jobs for us. The facts that known devices are combined together in way in which they function independently of each other in a known way will not grant a patent for the

combination.

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## What are not Patentable?

- Method of Agriculture or Horticulture: S. 3(h)
- Methods of Medical Treatment of Human and Animals: S. 3(i)
  - process for the medicinal, surgical, curative, prophylactic, diagnostic, therapeutic or other treatment of human beings or animals



3 h states that a method of agriculture or horticulture will not be regarded as an invention. So, what is protected is that a method or a process of agriculture or horticulture will not be regarded as an invention under the act. 3 i states 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 animals to render them free of disease or to increase their economic value or that of their products will not be regarded as an invention. So, this covers a whole lot of processes which could be for the benefit of human beings and animals, and treatment of human beings and animals to render them free from disease or to increase the economic value of or that of their products.

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## What are not Patentable?

- Plant and Animal Varieties: S. 3(j)
  - Micro-organism excluded
- Business Method, Computer Program: S.3(k)
  - Software patents; 'per-se' not patentable



Section 3(j) states that plants and animals in whole or any part thereof other than microorganisms, but including seeds and varieties of plants and animals, shall not be regarded as an invention. Now here plants and animals in whole or in part cannot be the subject matter of a patent, seeds and varieties of plants and animals and species essentially biological process for production and propagation of all these also cannot be regarded as a subject matter of a patent.

However, microorganisms are excluded now; this is where we get that from. So, plants and animals in whole or any part thereof are excluded other than microorganisms, which means microorganisms can be granted patents and there is a decision of the Calcutta High Court in the *Dominicas* case which says that microorganisms can be subject matter of a patent application.

Section 3(k) states that a mathematical method or a business method or a computer program per se or algorithms cannot be regarded as inventions under the act. A mathematical method is outside the purview and for the same reason algorithms are also outside the purview of a patent protection. Computer program per se and this is with reference to software; a computer program per se is not patentable. There is some discussion on that in fact, the Patent Office had released guidelines on computer-related inventions which is available

at the patent office website, which gives a clear commentary on what kind of computer programs are excluded. Business methods are again excluded from the ambit of patent protection.

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## What are not Patentable?

- Literary, Dramatic, Musical or Artistic Work etc: Section 3(l)
  - Subject matter of copyright
- Scheme or Rule: Section 3(m)
- Presentation of Information: S. 3 (n)
  - Topography of Integrated Circuits: Section 3(o) Subject matter of copyright



Section 3(l) states that a literary dramatic musical or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions cannot be subject matter of an invention. The reason for this is quite straight forward this clause covers copyrighted works. So, whatever subject matter of a copyright cannot be granted a patent protection, in addition to what is already covered by another kind of intellectual property right.

Section 3(m) states a mere scheme or rule or method of performing mental act or method of playing a game. So, an arrangement of things what we call as scheme or a rule or doing a mental act like adding or computing or a method of playing a game all these things are excluded from the subject matter of a patent. Section 3(n) a presentation of information the way in which information is presented is again not patentable, topography of integrated circuits again is not patentable we have a separate act for that was semiconductor chips layout act.

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## What are not Patentable?

- Traditional Knowledge: Section 3(p)
- Inventions Relating to Atomic Energy: S.4
  - If granted can be revoked under S. 65



And 3 p an invention which in effect is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known components cannot be the subject matter of an invention.

Now, this clause excludes what is already known in the traditional knowledge or which is in aggregation or duplication of known properties of traditionally known component or components. So, what is already known as a part of the common knowledge or what we call traditional knowledge cannot be the subject matter of a patent. For instance some food products may be regarded as having medicinal value and some communities may have discovered this before. So, in those cases they cannot be a patent for that component or that substance. You would have heard the dispute with regard to turmeric and neem they largely come under this provision what is already known in traditional knowledge cannot be patented.

Now, if you look at all these exceptions in section 3, there are host of them you can see some patent there. Now some of these exceptions are policy exceptions that the Indian government does not want patents to be granted on a method of agriculture or horticulture that is cleared to see that there is a policy behind it, some other exceptions here are exceptions because they have been protected by another enactment. We saw that

in 3 l a literary dramatic musical and artist stick works are excluded from the ambit of a patent protection because they are covered under the copyright act.

Again the same can be said for topography of integrated circuits you have a separate act to cover it. Some of them are exceptions which are recognised in the patent law, but they have been expressly mentioned here to take care of certain concerns; for instance traditional knowledge can always be used as a ground in challenging the novelty of an invention, traditional knowledge in most cases we can assume that there is some form of codification of this traditional knowledge. So, that traditional knowledge say a text in an ancient work or text which you could find in a local language, could always be used as a prior art material to question the novelty of an invention which tries to patent it.

So, though traditional knowledge is available as a mechanism or rather though traditional knowledge could be used for challenging novelty by questioning the novelty of that invention. Section 3 p provides a special category for the patent office to look at instances where traditional knowledge is covered even without having to look into the requirements of patentability. The requirements of patentability are novelty the invention involves novelty or it is new that the invention involves an inventive step and that the invention is capable of industrial application.

Now, even before applying these 3 steps, section 3 the exceptions in section 3 are applied first. Now this gives the patent office the advantage of not having to look into whether there is novelty and looking at the prior art materials that can question the novelty or that can kill the novelty even without doing that, section 3 p gives the patent office a quick way to look into an invention if traditional knowledge is involved. So, if traditional knowledge is involved using 3 p the patent office can raise an objection saying that there is traditional knowledge in this case we will not grant of patent. Obviously, when the party communicates its decision it is normally done by way of a document call the first examination report or the first statement of objections.

Now, in the first statement of objections the patent office will not only raise arguments under or challenge or raise objections under section 3 p, it would also raise objections on lack of novelty. So, but this we understand this as traditional ground that could be used

for questioning lack of novelty, but because traditional knowledge is involved it is been captured as an additional ground of exception. There are also some exceptions in this list which were introduced to address certain issues that are particular to India. Section 3 d has a history behind it, section 3 d was introduced in 2005 and before that India went through a transition period between 1995 to 2005 India had taken time as a part of enforcing its WTO obligations.

Now, during this time they were quite a lot of applications that came into India which pertain to product patents for pharmaceuticals before 1995 India did not grant product patents on pharmaceuticals in the course till 2005 India started accepting more particularly from 1999 onwards India start accepting applications for pharmaceutical products. Now there was a fear that earlier substances that were invented before, before 1995 could now come in some form of the other with the request for a 20 year term for a fresh patent. Now this concern is in some cases you will find discussions on ever greening of pharmaceuticals; ever greening is a term that is used which it would not that the monopoly over the drugs could be kept for a longer time just by ensuring that series of patents are filed cumulatively one after the other. So, that the total protection offered by the series of patents are much longer than the normal 20 year period given to the invention had there been only one patent.

Now, ever greening is something what are the pharmaceutical companies call lifecycle management, which is normally done in cases where products are involved and where products at the life of a product can be extended to maximize profits; 3 d addresses this issue because 3 d is a tool for the patent office to see that if there is a known substance involved, and only a new form is now being claimed. Now the 3 d gives the patent office the liberty to check that invention, if the invention actually demonstrate a better efficacy is the better efficacy or the enhanced efficacy is not demonstrated then by this fiction the patent office can regard the new form as something being similar to the known form. So, in affect the patent office is not doing anything, but just recognising a new form without any new benefits or without any enhancement of efficacy.

So, that is the objective behind the 3 d because 3 d came and makes sense in a country which went through this transition in its law where at one point it did not grant product

patents for pharmaceuticals and after a period of time it started granting product patents for pharmaceutical. So, there was this inherent danger the substances that were discovered before could now be passed on as new substances by just tweaking their form. So, that is the reason why the 3 d came into being; certain other objection are exceptions in section 3 like mere discovery of a scientific principle, formulation of an abstract theory, these are known even other jurisdictions have similar exceptions. This is to ensure that ideas or concepts are not patented or what should be patented should be a workable or an idea in working which results in a product or in a process or method of manufacturing or method of doing something.

Apart from section 3 section 4 also includes some exceptions that cannot be patented. Section 4 states inventions relating to atomic energy cannot be patented; a section 4 clearly mentions that no patent shall be granted in respect of an invention relating to atomic energy falling within subsection 1 of section 20 of the atomic energy act 1962. Now if you see there is a cross reference to section 65 that we had given, normally in a bare act that you will purchase in the market is the bare acts normally do not come with any cross references. We are given this cross references so that you can you will quickly know how section 4 is or the impact of section 4 what could be the related provisions.

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(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.

**4. Inventions relating to atomic energy not patentable.-** No patent shall S. 65  
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).


<sup>26</sup>[5. [Repealed by the Patents (Amendment) Act, 2005]

CHAPTER III  
APPLICATIONS FOR PATENTS

**6. Persons entitled to apply for patents.-**(1) Subject to the provisions SS. 4, 5,  
contained in section 134, an application for a patent for an invention may be 7, 134,  
made by any of the following persons, that is to say, - 135

(a). by any person claiming to be the true and first inventor of the S. 2(1)(y)  
invention;

<sup>25</sup> Inserted by the Patents (Amendment) Act, 2002, S.4, (w.e.f. 20.05.2003).  
<sup>26</sup> S. 5 repealed by the Patents (Amendment) Act, 2005, (w.e.f. 01.01.2005) S. 4. Prior to its omission, S.5 read as  
under:- "5. *Inventions where only methods or processes of manufacture patentable.* - [(1)] In the case of inventions

  
NPTEL



So, in all the cross references that we have given in bold you will find related provisions or provisions where for the detail is given. Now section 65 gives the government the right to revoke a patent in cases relating to atomic energy.

So, section 4 is a bar on filing applications pertaining to atomic energy, if for some reason the patent gets granted by oversight then section 65 gives the government the right to revoke a the patent. Section 65 says that where at any time after the grant of a patent which means a patent got granted pertaining to atomic energy, the central government is satisfied that the patent is for an invention relating to atomic energy for which no patent can be granted under subsection, one of section 20 of the atomic energy act 1962 it may direct the controller to revoke the patent.

So, what the central government will do? Is it would ask the controller to revoke the patent and there upon the controller after giving notice to the paternity and every other person whose name has been entered in the register is having an interest in the patent, and after giving them an opportunity of being hurt may revoke the patent. Two, in any proceeding under subsection one the controller may allow the patent to amend the complete specification in such a manner as he considers necessary instead of revoking the patent. So, there is a way out it need not be revocation if the patent can be amended to the satisfaction of the controller the patent will still be allowed to continue.