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Patentable And Non-Patentable Inventions In India: A Critical Analysis

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ABSTRACT

The Indian patent regime, governed by the Patents Act, 1970, establishes a dual framework of requirements for patentability and statutory exclusions to ensure that innovation benefits to both inventors and the public. To be patentable, an invention must be novel, demonstrate an inventive step, and have industrial applicability. However, Sections 3 and 4 of the Act exclude subject matter such as discoveries of natural principles, mere admixtures, new forms of known substances without enhanced efficacy, methods of agriculture, medical treatment processes, aesthetic creations, and inventions related to atomic energy.

These exclusions serve to protect public health, environmental safety, national security, and access to essential resources, while preventing misuse of the patent system, including practices like evergreening. By clearly defining the scope of patentable subject matter, Indian law strikes a balance between incentivizing genuine technological progress and safeguarding societal interests. This framework reflects India's developmental priorities and its obligations under international agreements, ensuring that intellectual property rights contribute to innovation without compromising public welfare.

KEYWORDS : Patentability; Non-patentable subject matter; Patents Act, 1970; Sections 3 and 4; Novelty; Inventive step; Industrial applicability; Evergreening; Public interest; Intellectual property rights.

INTRODUCTION

Patents play a vital role in promoting innovation by granting inventors exclusive rights over their creations for a limited period. In India, the framework for patent protection is governed by the Patents Act, 1970, which sets out both the requirements for patentability and the categories of subject matter excluded from protection. The law aims to strike a careful balance between rewarding creativity and ensuring that essential knowledge, natural resources, and socially significant technologies remain accessible to the public.

For an invention to qualify for a patent, it must be novel, involve an inventive step, and be industrially applicable. Sections 3 and 4 of the Act specifically exclude certain subject matter — such as mere discoveries, natural principles, medical methods, plants and animals, and inventions related to atomic energy — to prevent misuse of the patent system and to safeguard

public interest. These provisions reflect India's unique social, economic, and developmental considerations, as well as its commitments under international agreements.

By defining clear limitations for what can and cannot be patented, the Indian patent system seeks to encourage genuine technological advancement while ensuring that innovation serves the greater good of society.

OBJECTIVES

1. To analyze the criteria for patentable inventions under the Indian Patents Act, 1970.
2. To study the categories of non-patentable inventions as per Sections 3 and 4 of the Act.
3. To understand the significance and rationale behind excluding certain subject matters from patent protection.

Hypothesis

The exclusions under Sections 3 and 4 of the Indian Patents Act, 1970, particularly provisions like Section 3(d), effectively prevent patent abuse and ensure public access to medicines without significantly discouraging genuine innovation and pharmaceutical investment.

Research Gap

Although many studies explain the criteria of patentability and exclusions under the Patents Act, 1970, there is limited critical analysis of their practical impact on innovation, pharmaceutical investment, and public health in India. Most literature focuses on legal provisions but lacks a balanced evaluation of how these exclusions influence accessibility and R&D incentives in the current global IP context.

PATENTABILITY AND NON-PATENTABILITY IN INDIAN LAW

In India, for an invention to get a patent, it must fulfill three main conditions — it should be new, it must involve a technical improvement or an inventive step, and it should be capable of being made or used in industry.[1]Even if these requirements are met, the invention will not be granted a patent if it falls under the restrictions listed in the Patents Act.[2]

PATENTABILITY REQUIREMENTS:

An invention is considered patentable only if it satisfies the following: it should be novel, meaning it has not been disclosed anywhere in the world before the patent application.[3]It should also involve an inventive step, which means it is not obvious to someone with normal skills in that field and shows a technical advancement or economic significance.[4] Further, it should have industrial applicability, which means it can be produced or used in some industry.[5]

Non-patentable Subject Matter:

Sections 3 and 4 of the Patents Act specify what cannot be patented.[6] These include: ideas that are against natural laws; inventions harmful to life, health, or the environment; discoveries of existing natural substances; new forms of known substances without better effectiveness; simple mixtures without a special combined effect; arrangements of known devices without new function; methods of farming; medical treatment methods; plants, animals, and seeds (except microorganisms);

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1 The Patents Act, 1970, s. 2(1)(l), s. 2(1)(ja), s. 2(1)(ac).

2 Ibid., ss. 3–4.

3 Ibid., s. 2(1)(l).

4 Ibid., s. 2(1)(ja).

5 Ibid., s. 2(1)(ac).

6 Ibid., ss. 3–4.

mathematical and business methods; computer programs as such; artistic works; and rules for games or mental activities.[7] In addition, no patent can be given for inventions connected with atomic energy.[8]

3. QUICK COMPARISON TABLE

PATENTABLE	NON-PATENTABLE
Novel, inventive, industrially applicable	Discovery of natural substances
New drug molecule with new therapeutic effect	New form of known drug without enhanced efficacy
Improved machine with technical advancement	Mere change in size/arrangement of parts
Genetically engineered microorganisms	Plants, animals, seeds, and essentially biological processes
Manufacturing process for a product.	Method of treatment for humans or animal

1.Frivolous inventions — contrary to natural laws (e.g., perpetual motion machines)[9].

For an invention to be granted a patent, it must show a clear improvement over what is already known in the relevant field. This improvement can take the form of a technical advancement, such as introducing a new feature, enhancing efficiency, or improving performance. Alternatively, it may offer economic benefits, like lowering production costs or making a product more affordable. In addition, the invention must not be something that a person with ordinary skill in the field could easily think of or develop based on existing knowledge. In other words, it should involve a creative step that goes beyond routine experimentation or common practice.

2. Inventions against public order or morality[10] — harmful to human, animal, or plant life or the environment.

Even if an invention is new and meets the technical requirements for a patent, it will not be granted protection if its use would conflict with accepted standards of public safety, ethics, or decency. This includes inventions that could cause harm to people, animals, or plants, as well as those that might damage the environment.

For example, a process for producing prohibited drugs, a device intended for illegal activities, or a chemical that destroys crops and pollutes soil would all be excluded from patent protection.

3.Discovery of scientific principles or abstract theories — or discovery of naturally occurring substances[11].

Simply finding or explaining a natural law, scientific fact, or theoretical concept does not qualify for a patent. Scientific principles, mathematical formulas, or abstract ideas, while valuable, are not considered inventions on their own.

Likewise, discovering a substance that already exists in nature — such as a plant compound, mineral, or microorganism — is not patentable by itself. However, if that natural substance is altered, processed, or applied in a new and useful way, the resulting invention may be eligible for patent protection.

4. New form of a known substance without enhanced efficacy — Section 3(d) (important in

[7] Ibid., s. 3(a)–(p).

[8] Ibid., s. 4; The Atomic Energy Act, 1962.

[9] Section 3(a) of the Patent Act, 1970

[10] Section 3(b) of the Patent Act, 1970

[11] Section 3(c) of the Patent Act.1970

Novartis AG v. Union of India, 2013)[12].

If a substance is already known, simply creating a new version of it — such as a different salt, crystal form, derivative, or particle size — will not qualify for a patent unless this new form clearly provides a real improvement in therapeutic effectiveness.

This rule is designed to prevent evergreening, where companies make small, non-therapeutic changes to extend patent rights. The improvement must show a genuine benefit to patients, not just changes in physical or chemical properties.

For instance, in Novartis AG v. Union of India (2013), the Supreme Court refused to grant a patent for a new crystalline form of the cancer drug imatinib mesylate because it did not demonstrate a significant increase in therapeutic efficacy compared to the existing form.

5. Mere admixture — combination of known substances without synergistic effect.

A simple mixing of two or more already known substances will not qualify for patent protection if the mixture only shows the combined effect of each substance individually, without creating any new or improved result.[13] For a combination to be patentable, it must produce a synergistic effect, meaning the result is greater than the sum of the parts.[14] If no such unexpected improvement exists, the combination is considered obvious and therefore not patentable.[15]

For example, mixing two existing medicines in a tablet will not be patentable if each works in the same way and there is no new combined benefit.[16] However, if the combination unexpectedly increases the effectiveness of treatment or reduces side effects beyond what each could achieve separately, it could meet the requirement for patentability.[17]

6. Mere arrangement or duplication of known devices — without new functionality.

This means that if someone simply rearranges, duplicates, or combines devices that are already known, and the resulting product works in the same way as before without offering any new function or improved result, it is not patentable.

Mere arrangement → Changing the order or placement of parts without changing how they work.

Mere duplication → Repeating the same device or feature without creating any new benefit.[18]

To be patentable, the arrangement or combination must create a new function or enhance performance beyond what each part could do on its own.

For example:

Putting two known fans side by side without any design change to improve airflow would not get a patent. But if the arrangement changes the airflow pattern in a way that significantly improves cooling efficiency, it might qualify.

7. Methods of agriculture or horticulture[19]

In India, processes or techniques used for farming or growing plants are not eligible for patent

[12] Section 3 (d) of the Patent Act, 1970.

[13] Section 3(e) of the Patents Act, 1970.

[14] Ibid

[15] Ibid.

[16] Ibid.

[17] Ibid.

[18] Section 3 (f) of the Patent Act,1970.

[19] Section 3 (h) of the Patent Act, 1970.

protection. This covers activities such as planting seeds, irrigation, soil preparation, fertilization, and harvesting in agriculture, as well as methods of cultivating fruits, vegetables, flowers, and ornamental plants in horticulture.

These methods are excluded because they are essential for public benefit, depend largely on natural processes, and should remain freely accessible to farmers and the community. For example, a new way of planting or watering crops cannot be patented, but an innovative agricultural tool or a novel process for making fertilizer could qualify.

8. Medical methods — processes for treatment of humans/animals[20].

In India, any method or process used to diagnose, treat, or prevent illnesses in humans or animals cannot be patented. This includes surgical operations, therapeutic procedures, and diagnostic techniques applied directly to the body.

The exclusion exists to ensure that doctors, surgeons, and veterinarians can freely use essential medical procedures without legal or financial barriers, as these are vital for public health. For instance, a new surgical method for heart treatment or a diagnostic process for detecting disease in animals is not patentable. However, an innovative medical device or a new medicine used in such treatments may be eligible for a patent if it meets the required criteria.

9. Plants and animals in whole or part (other than microorganisms)[21].

In India, plants and animals, whether as whole organisms or in parts such as seeds, varieties, or species, are not eligible for patents. The only exception is for microorganisms, which can be patented if they satisfy the legal conditions.

This rule covers living plants and animals along with their genetic material, as they are considered natural resources that should remain freely accessible. It also reflects India's commitments under the Biological Diversity Act, 2002 and global agreements like the Convention on Biological Diversity (CBD), which aim to protect biodiversity and prevent its private monopolization. For example, a new wheat variety or cattle breed cannot be patented, but a genetically modified microorganism for producing medicine or cleaning oil spills may qualify.

10. Mathematical or business methods, computer programs per se, and algorithms[22].

Mathematical methods include formulas, calculations, or proofs, which are theoretical in nature and not tied to a specific industrial application.

Business methods cover strategies or schemes for trade, commerce, or financial transactions, which are considered commercial practices rather than inventions.

Computer programs per se means software on its own, without integration into a novel hardware system or without producing a direct technical effect, is not patentable.

Algorithms are step-by-step instructions for solving problems or performing tasks, and are excluded unless they form part of a larger, patentable technical process.

For example, a formula for interest calculation or a trading algorithm cannot be patented, but software embedded in a medical device that produces a tangible technical result could qualify.

11. Aesthetic creations — literary, dramatic, musical, or artistic works[23].

[20] Section 3(i) of the Patent Act,1970.

[21] Section 3 (j) of the Patent Act,1970.

[22] Section 3 (k) of the Patent Act,1970.

[23] Section 3 (l) of the Patent Act,1970.

In India, works of creativity such as literature, plays, music, paintings, sculptures, and other forms of artistic expression are not eligible for patents because they are not considered technical inventions.

These creations stem from artistic skill and imagination rather than scientific or industrial innovation. They are instead protected under the Copyright Act, 1957, which grants creators exclusive rights to reproduce, distribute, and publicly display their works.

For instance, a novel, a piece of music, or a painting cannot be patented, but an invention like a new machine for printing books or a device for composing music could qualify for patent protection.

12 Schemes, rules, or methods of performing mental acts or playing games[24].

In India, schemes, rules, or methods that deal solely with mental activities or the playing of games are not eligible for patents, as they do not involve a technical invention or industrial application.

Mental acts include methods based purely on human thinking, reasoning, memory, or calculation, without the use of any new technical process or device.

Game playing refers to the rules, formats, or methods for playing games — whether board games, card games, or sports — which are treated as recreational ideas rather than technical innovations.

For example, a new set of rules for a chess variation or a novel scoring method for a sport cannot be patented. However, a new gaming apparatus or a digital gaming system with unique technical features might be eligible for patent protection.

B. Section 4 — Atomic Energy

No patent is granted for inventions relating to atomic energy as per the Atomic Energy Act, 1962.

In India, inventions connected to atomic energy or the use of nuclear materials are not eligible for patents, no matter how new or technically advanced they may be.

This restriction, under Section 4 of the Patents Act, 1970 and the Atomic Energy Act, 1962, ensures that all nuclear-related technologies remain under the exclusive control of the government for reasons of national security, safety, and public interest.

For example, a method for enriching uranium or a machine for generating nuclear power cannot be patented by private individuals or companies, as such technologies are managed solely by the Department of Atomic Energy.

Methodology

The research follows a doctrinal method, analyzing provisions of the Indian Patents Act, 1970, the TRIPS Agreement, and key judgments like Novartis AG v. Union of India. Secondary data from books, journals, and official reports were examined. A comparative and critical approach was used to assess rules on patentability, exclusions, and their impact on public interest.

Findings

1. Patentability Requirements

Under the Indian Patents Act, 1970, an invention must be new, non-obvious, and industrially applicable to qualify for protection.

2. Exclusions from Patentability

Sections 3 and 4 exclude certain categories such as natural discoveries, simple mixtures, agricultural methods, and atomic energy-related inventions.

3. Judicial Approach

[24] Section 3 (m) of the Patent Act, 1970.

In Novartis AG v. Union of India (2013), the Supreme Court clarified that new forms of known drugs without improved efficacy cannot be patented under Section 3(d).

4. Public Health vs Innovation

While these rules ensure affordable medicines, some argue that strict standards may limit pharmaceutical research investment in India

DISCUSSION

The Indian Patents Act, 1970 maintains a balance between innovation and public health. It requires inventions to be novel, non-obvious, and industrially applicable, meeting TRIPS standards while allowing flexibilities.

Sections 3 and 4 exclude natural discoveries, traditional knowledge, medical methods, and atomic energy inventions to prevent undue monopolies and protect public welfare.

The Supreme Court in Novartis AG v. Union of India (2013) restricted patents on new forms of known drugs without improved therapeutic value, curbing "evergreening." This ensures affordable medicines for the public.

Although some argue that strict standards may reduce foreign investment and research incentives, India prioritizes accessibility and affordability over extended monopolies, reflecting a public interest-driven patent system.

CONCLUSION

The concept of patentability in India is built on a balance between encouraging innovation and safeguarding public interest. For an invention to be patentable, it must meet the core requirements of novelty, inventive step, and industrial applicability, while avoiding the exclusions laid down in Sections 3 and 4 of the Patents Act, 1970. These exclusions — such as discoveries of natural principles, mere admixtures, methods of agriculture, medical treatments, and inventions relating to atomic energy — ensure that essential knowledge, public health, environmental safety, and national security are not compromised for private gain.

By clearly defining what can and cannot be patented, Indian patent law seeks to prevent misuse of the patent system, curb practices like evergreening, and promote access to vital resources and technologies. This framework aligns with India's broader commitments under international agreements, while addressing the country's social, economic, and developmental priorities. In essence, the law encourages genuine innovation that benefits society as a whole, while keeping critical areas free from monopolization.

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