

Status of Patent Laws in the Era of Artificial Intelligence

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Abstract

Artificial intelligence is the future of technology, and not just in the field of science. Right from the daily function in our households to the manufacturing process in big industries can be done by machines with artificial intelligence. But it needs to be seen whether this encroachment of artificial intelligence in our day-to-day life activities would not render its maker obsolete. The object of this research is to find out whether artificial intelligence (AI) can get a patent registered in its name as an inventor. For that purpose, it will have to be established whether an artificial intelligence can be considered a person within the meaning provided under the Indian Patents Act and other relevant acts or agreements and whether it can be considered the true and first inventor of an invention. The research also focuses on the aftereffects of the grant of a patent to artificial intelligence as an inventor.

Keywords: Artificial intelligence, Patent Act 1970, person skilled in the art, trade-related aspects of intellectual property rights

INTRODUCTION

Since the invention of the wheel, human beings have come a long way, and over time, human intellect has also developed a lot. In this technologically advanced world that we live in, what seems impossible today can be made possible tomorrow. One of the greatest inventions in the history of mankind is considered to be the invention of “artificial intelligence”.

Artificial intelligence is also referred to as AI; as the name suggests, it is a machine created by man that is intelligent enough to think and innovate on its own. Thinking and innovation are generally attributed to humans; thus, artificial intelligence is the machine that has come closest to replicating these human qualities.

Artificial intelligence, or AI, is ultimately an invention made by a man; it is a result of human intellect. Whenever we talk about an invention which comes into being as a result of a man's intellectual labor, it is his intellectual property, and the person is entitled to protect it.

There are several legislations made at national and international level which provide for the protection of intellectual property. Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an agreement entered into between member countries of the World Trade Organization (WTO). The agreement contains provisions related to all kinds of intellectual property, including patents. All the member countries were expected to implement appropriate laws incorporating TRIPS or TRIPS plus provisions within their respective national boundaries. The TRIPS agreement is considered to be the bible in relation to intellectual property rights. In India, the protection of inventions through patents is provided under the Indian Patents Act of 1970.

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A patent is an instrument which confers property rights on the true and first inventor of the invention. A patent can be referred to as an instrument which grants some privileges, property, or authority over the invention to one or more persons. A patent is granted for an invention when it is novel, non-obvious to a person skilled in the art, and has industrial utility. Thus, artificial intelligence, being an invention, is entitled a patent over it.

The Indian Patent Act is based on a first-to-apply basis. Thus, a person who applies first gets the patent [1]. So even if a person first invents but applies later on, and if someone else applies before him for the same invention, the latter would be the one to whom the patent is granted. Thus, a patent is granted to a person who is the true and first inventor.

Now the question arises; since an artificial intelligence can think and innovate on its own, if the AI invents something which is new and has industrial utility, it will be considered as an inventor of such an invention. As seen earlier, there are several conditions to be fulfilled before a patent can be granted and in determining to whom it can be granted, i.e., who will be regarded as a true and first inventor. Thus, if an artificial intelligence is to be regarded as the inventor of the invention and to get it patented in its name, there are several conditions that need to be fulfilled. The conditions are as follows.

THE APPLICANT MUST BE A PERSON

The person to whom a patent is granted is called a patentee. Section 2(1)(p) of the Patents Act of 1970 defines a patentee as “the person for the time being entered on the register as the grantee or proprietor of the patent”. Thus, it is a ‘person’ who may be the grantee or the proprietor to whom the patent under the act is granted.

Now the question arises: what kind of persons are included under the term ‘person’ which is used to describe a patentee, inventor, assignee, legal representative, etc., under the act? Despite such frequent use of the word ‘person’, the definition provided for it under Section 2(1)(s) of the Patents Act 1970 is not clear as it only states that the term person under the act shall include the government also. If there is any lacuna in the national acts relating to intellectual property, reference should be made to the bible of intellectual property rights, i.e., the TRIPS agreement.

The TRIPS agreement, in clause (3) of Article 1 which provides for ‘Nature and Scope of Obligation’, while describing who would be treated as nationals of its member countries stated that “shall be understood as those natural and legal person that would meet the criteria for eligibility”. The Patent Rules of 2003, also explain that the term person as shall include a natural person and a small entity.

In India, whenever a particular provision is not properly described, a reference can be made to the General Clauses Act of 1977. The purpose of the act is to incorporate, in a single statute, interpretations of various provisions. Thus, in order to understand the meaning of ‘person’, a reference can be made to this act. Section 3(30) of the General Clauses Act defines a person as “any person shall include any company, association, or body of individuals, whether incorporated or not”.

After a combined reading of the provisions provided under the TRIPS agreement and the definition provided under The General Clauses Act 1977, it can be concluded that the term person shall be presumed to include a natural person and so far as the legal person is concerned it shall be included by virtue of the mentioned laws.

Thus, for an artificial person to hold a patent as a patentee, it should be capable of being considered either a ‘natural person’ or ‘legal person’.

Natural Person

In jurisprudence, natural persons are described as human beings having several rights and duties. They are both persons in fact and in law [2]. Thus, the term natural person strictly includes human beings only, and therefore, artificial intelligence cannot be considered a natural person.

Legal Person

Salmond defines a legal person as “beings real or imaginary, which, for the purpose of legal reasoning are treated to a greater or lesser degree in the same way as human beings”. Thus, legal persons are persons in law but not in fact; they are also termed fictitious, juristic, artificial, or moral persons [3]. Considering this definition, artificial intelligence, being artificial and fictitious in nature, can be regarded as legal.

Existing laws are amended, or altogether new laws are made as per present-day needs. Artificial intelligence (AI) possesses the attributes necessary to be recognized as a legal person, but in India, artificial intelligence is not used on a wider scale and people are also not aware of it. Artificial intelligence is the future of technology, but today, it is not that easily available and is used only by a fraction of people in the entire world. At present, there are no laws which provide for or recognize AI as a legal person. But in future, there is a possibility of AI being recognized as a legal person just like a company, association of persons, trust, etc. But before any entity can be regarded as legal persons, it has to fulfill certain conditions, and if these conditions are fulfilled then only law will confer upon it the status of a legal person. The conditions are as follows.

Acceptance by Society

One of the essential requirements for an entity to be recognized as a legal person is that it must be recognized as such by society. A company is a legal entity; it can sue and be sued, hold property, etc., in its own name. The reason because of which the company acquired legal status is its acceptance by the society. Initially, people were skeptical about investing in such an organization but as people became aware of the advantages despite the risk involved, it resulted in their increased participation. This compelled the lawmakers to make appropriate laws governing a company and thus recognized it as a legal personality. Social recognition cannot be a basis for the grant or rejection of legal personality but it can be considered as a pre-condition to arrive at this question. Today, artificial intelligence is in its initial stage of development and only a small fraction of the population is aware about it. Thus, there is a possibility that the question of legal personality of artificial intelligence will be taken up in the near future.

Conflict with Existing Laws

Whenever a new law is introduced it has to be seen that it does not affect any of the existing laws. Thus, while introducing laws which recognize artificial intelligence as a legal person, it has to be seen that it does not affect the right of the natural person or any other legal persons.

Usefulness

Unless and until the entity provides economic or any kind of moral benefits, it cannot be recognized as a legal person. In case of company form of organization, legal personality is conferred upon it because of the benefits like financial transparency, accountability, efficiency afforded by it. So while considering whether or not legal personality should be conferred upon artificial intelligence, it should be seen whether doing so would afford any benefits.

Some of the researchers have argued that since artificial intelligence has the capability of thinking on its own and could take decisions with minimum human intervention, by conferring legal status on it, the AI would be accountable for its own actions. Thus, if any decision of the AI is likely to cause harm to another, it shall be held liable for its own actions rather than the innocent developer being punished for an act which he had neither the intention to commit nor the knowledge of it happening.

This argument could hold validity in civil offences where an artificial intelligence if proved to have committed the offence, appropriate amount of fine or penalty can be recovered out of the property held by the artificial intelligence as it is a legal personality. But where artificial intelligence invents a machine which could cause harm to another, in the event of death or physical harm being caused to a person, will it be enough to hold artificial intelligence liable, as no amount of money could compensate for the loss of a life. A similar dilemma would arise while considering whether an AI being a legal person should be granted a patent for an invention made by its own intellect, as the invention can be capable of either saving lives or causing harm to another.

TRUE AND FIRST INVENTOR WITHIN THE MEANING OF THE ACT

Section 6 of the Indian Patent Act 1970 provides for the persons who are entitled to apply for patent. Clause (a) of sub-section (1) of Section 6 provides that subject to provisions contained in Section 134, an application for patent can be made by any person claiming to be the true and first inventor of the invention. A true and first inventor is a person who is the first to convert ideas and scientific principles into working inventions [4]. Since the Indian Patent Act is based on first-to-apply basis, one more condition is added and therefore a true and first inventor would be the one who invents first and thereafter applies for a patent before anyone else.

The term true and first inventor is defined under Section 2(1)(y) of the Patents Act 1970 as “true and first inventor does not include either the first importer of an invention into India, or a person to whom an invention is first communicated from outside India”. On reading this definition, it is clear that it only provides for those who are to be excluded. Since there are no provisions as whom to be included theoretically, artificial intelligence can be regarded as the inventor. But in actual practice, only a natural person is given the status of an inventor.

The definition of true and first inventor under the Indian Patents Act may appear to be vague but the definition provided by the United States Patent and Trademark Office (USPTO) is very clear and precise. The term inventor is defined under 35 USC 100 (f) as, “inventor means the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention”. Interpreting this section, the USPTO in the DABUS case refused to hold the artificial intelligence-based machine called DABUS to be the inventor of the flashlight and food container claimed to be invented by it. The owner of the artificial intelligence-based machine claimed that the machine itself identified the novelty of its own idea before a natural person did [5]. The USPTO held that the words used in the definitions like “individual” and “who” as per their dictionary meaning point to a natural person and thus rejected the application.

Another argument that can be put forward against providing the status of inventor upon artificial intelligence is that a true and first inventor does not include a person who performs the experiment on the instruction of the inventor. Thus, assuming that an artificial intelligence has a legal personality, it can be treated as a person; despite this, it cannot be treated as an inventor by virtue of this provision, as it functions as per the instructions or algorithms uploaded into it by its developer.

One of the purposes of granting intellectual property rights is to incentivize the inventor which in turn would encourage and inspire him to make more inventions. Artificial intelligence can be refused inventorship on the basis of this objective. John Locke’s labor theory is a jurisprudential theory which is considered to provide the best justification for intellectual property rights as it is based on the said objective.

Locke’s labor theory states that a person is entitled to receive the fruits of his labor. It provides that when a person invests his money, time, and efforts, he must receive returns for those efforts. Locke’s justification has one assumption, it states that every individual has property right over his labor thus

any product obtained by applying such labor would directly become the property of the individual from which he can derive benefits.

Now the question arises whether an artificial intelligence which is a machine would feel motivated by the benefits received in exchange of its efforts. In the current scenario, the answer would be no. Thus, after considering all the arguments, it can be concluded that even if artificial intelligence is assumed to be regarded as a legal personality, still it cannot be granted the status of an inventor.

PERSON SKILLED IN THE ART TO TEST THE INVENTIVE STEP

The TRIPS agreement has laid down a three-tier test for the grant of patents. The test provides that the invention must be novel, not obvious to a person skilled in the art, and have industrial utility. Novelty and obviousness together constitute an inventive step, and to judge whether the invention has amounted to an inventive step or not, it is to be referred to a person skilled in the art (PSITA) to judge whether it is new and not obvious to him. This duty is conferred upon PSITA by virtue of Section 2(ja) of the Patents Act, 1970.

A person skilled in the art means a person who is ordinarily practicing in the field to which the invention is related. In order to determine the inventive step, the inventor has to refer to all the prior art that is available; thus, to do so, the PSITA must be capable to understand the technical information contained in the prior art on the basis of which he is able to draw the conclusion, as to whether the invention is new and not obvious. Thus, PSITA does mean a person who has only “ordinary” or “average” skill but is one who though not an expert is capable of making the necessary correlation. In *Sankalp Rehabilitation Trust vs. Hoffmann-Roche*, the Intellectual Property Appellate Board (IPAB) while defining “person skilled in the art” stated that such a person has read prior art, knows a normal course of research, and needs no guidance [6].

The standard followed in the United States of America is PHOSITA, i.e., a person having ordinary skill in the art. It means a person has more knowledge about a subject matter than a layman but not as much as an expert. The difference between “person skilled in the art” and “person having ordinary skill in the art” is the use of the word “ordinary” which reduces the standard of knowledge and expertise a person is expected to possess [7].

If an artificial intelligence is treated as a legal person and presumed to have fulfilled the condition to grant the status of an inventor, the next question that arises is that while determining whether the invention is obvious or not, who would be regarded as a person skilled in the art or person having ordinary skill in the art. Artificial intelligence, after all, is a computer program, the task which a human would perform within 10 days a computer program may perform it within hours.

The reason for providing the condition of invention not being obvious to PASITA or PHOSITA is to make sure that at the time of invention, there was no other person who could have thought about and invented the same product. But the comparison is not possible between a human and non-human, and ultimately, the non-obviousness could not be established, thus patents cannot be granted in such a situation as one of the conditions of the three-tier test remains unsatisfied. Through this test, it is again established that an inventor is expected to be a natural person [8, 9].

LITERATURE REVIEW

In the near future, artificial intelligence will play an important role in our day-to-day lives. Even today, we use artificial intelligence in some way or another without even noticing it, such as the auto-correct function, Google Assistant, Siri, Cortana, etc. on our mobile phones. All of them are in their initial stages of development and thus are not fully automated.

There will be a time when artificial intelligence machines will be fully automated and be able to think and innovate on their own with no or minimal human intervention. In such a situation, when an

invention is made by a fully automated AI machine, a question arises as to whether such an AI machine can be regarded as the inventor. Mr. Shubham Singh in his article “Attribution of legal personhood to artificially intelligent beings” which was published in the Bharti Law Review argued that artificial intelligence should be granted legal personality so that no innocent developer would be held liable for acts of artificial intelligence. But this assumption does not take into account whether holding AI accountable would be sufficient in criminal cases.

This query is addressed by Roman Dremluga, Pavel Kuznetsov, and Alexey Mamychyev in their article “Criteria for recognition of AI as a legal person” published in the Journal of Politics and Law. It was stated that so far as the question of legal personality of artificially intelligent lethal machines are concerned, granting such legal personality would not be moral whereas in civil matters, such legal personality can be granted. The authors have also provided various requirements to be fulfilled by an AI for it to be regarded as a legal person. The authors have concluded that the question of legal personality of artificial intelligence is to be decided by the court having regard to the facts and circumstances of the case. As of now, a definite conclusion cannot be drawn.

CONCLUSION

Artificial intelligence is still in the initial stages of its development, and it would take a few more years for a fully automated AI to come into being. Currently scientists themselves have not completely grasped the concept of AI, thus legal professionals who are not experts in that field cannot be expected to understand it and make laws accordingly.

Whenever a new law is introduced or an amendment is made to an existing law, it is influenced by current events or past events. Lawmakers cannot be expected to make laws for the future which may or may not happen. Thus, considering the current status of laws, a patent cannot be granted to an artificial intelligence inventor.

Artificial intelligence at present cannot be considered as a legal person as there are certain requirements for it to fulfill before it can be granted legal personality but there is no denying the fact that AI meets all the criteria to be regarded as a legal person, and thus in near future, there is a possibility of it being granted a legal status. But for a patent to be granted, the inventor must be someone or something that falls within the lines drawn by the existing laws, and since at present, AI is not in a position to fulfill these conditions, so the patent cannot be granted to an AI inventor.

So now the question arises whether there is a possibility of law being changed such that it would become applicable to artificial intelligence also. Lawmakers are not scientists; they cannot judge what could be the capability of an AI in the next few years. Thus, the only solution to this would be that as and when the concerned developments are made, the lawmakers should consider every aspect of it and be open to the idea of enacting a new law covering the current situation if necessary. But this must be done having regards to the fact that by conferring accountability on autonomous AI, innocent developers will be protected provided it does not amount to denial of justice to the victim, and also the fact that by conferring patent or copyright to an AI, will it hamper or suppress the innovativeness in humans.

In a few years, there will be hundreds of fully automated AI machines and these can think and innovate on their own without any human intervention. The question that would arise before lawmakers would be as to what status should be granted to an AI as it would only be a step away from being regarded as a natural person. Entities with legal personalities like a company, trust, idol, etc., are fictitious and artificial but they cannot make decisions on their own; that right ultimately vests with humans. Thus, while determining the legal identity of an artificial intelligence, lawmakers would have to consider to what extent rights are to be conferred on an AI and what its effects would be.

Many probable solutions as to how the inventions made by artificial intelligence are to be treated and who should be considered as the inventor of such inventions have been recommended by several

experts. The first suggestion is that the AI should be granted legal personality and thus made liable for its actions. This suggestion is only partially accepted by some experts stating that it would neither be morally correct nor sufficient from the point of view of the victim to hold the artificial intelligence accountable in criminal offences but so far as civil matters are concerned, the legal personality can be granted subject to fulfillment of requisite conditions. Some have suggested that an invention made by an artificial intelligence should be patented and so far as the inventorship is concerned, the artificial intelligence and its inventor should both be recognized as sub-inventors. The other option which was suggested is that since artificial intelligence itself is an invention and thus owned by its developer, programmer, etc., and thus if an application for patent is made for an invention made by an artificial intelligence without any assistance of his owner, the patent should be granted to the AI as an inventor and after that, all the rights arising from the patent should immediately be transferred to its human owner.

The future holds many possibilities, but laws can be made only when the predicted possibilities come into existence.

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