Restructuring the Patentability Examination Standards for AI-Generated Outputs

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Abstract. This article's thesis is that no fresh patentability' gate shall be needed for works produced by AI, but that the challenge is how to apply the current measuring sticks. Scrutineering should proceed to those outputs where, either by itself alone, or as helper, collaborator or facilitator, a machine has at least made direct and substantive generative contributions to the technical solution, but the question of inventorship should be distinct from patentability. Novelty: the one-to-one comparison should not be discarded, although the search could be wider, the point is that what is given out by a machine should not be resorted to as the evidence of an objective technical fact; rather the substantive accessibility should be relied upon; what the model generates internally must be distinguished from what the law treats as disclosed. Inventiveness requires reconstructing the person skilled in the art against the technical environment at filing time, and the understanding that the speed of a generation was not synonymous with non-obviousness, technical and algorithmic features both being considered as part of that environment. Stability in implementation, actual effects, and correspondence with the claims is required for the practical applicability, opacity of the model is not a lack of applicability, difficulties with disclosure are part of the specification, and ethical objections belong to the statutory prohibitory provisions. What these calibrate is the factual and evidentiary basis for examination (not the statutory threshold), which the argument neither raises nor lowers.

Keywords: AI-generated outputs; patentability examination; novelty; inventiveness; practical applicability.

1. Introduction

In less than ten years,‘artificial intelligence for science’ has evolved into something not only more prevalent in research policy but that also outpaces it. It turns out that AI is embedded in many areas of science already; proposing new alloys, screening compounds and designing molecules, to name a few. Two questions follow. Can Invention create in this manner be subject to patentability? If so, what is an Examiner to do when an application comes in “Made by a Machine”? Either question has not a lot more delay.[1]

Some answers have been starting to emerge in literature to the first. Today, AI-made inventions – at least when the machine has contributed to the development of the technical solution – are seen by scholars in China and elsewhere around the world as potential objects for protection.[2] Some take the idea one step further; the field is wide open to accepting AI-generated content in the patent system and the criteria for subject matter and conditions for grant have yet to be fully explored, backstopped by the disclosure requirements and the inventiveness standard that will certainly need to flex.[3] The literature, however, has not provided an account of examination itself. The divisions are somewhat loose and assisted, collaborative and autonomous cases are lumped together; inventorship absorbs attention, while the question of how substantive examination should proceed once inventorship is settled goes largely undiscussed; and the elements of the doctrine are treated one at a time. Proposals for reform, such as raising the standard of inventiveness, or changing disclosure, in turn, often hover only in the realm of the principle and are silent about the level of machine involvement that should be placed at which standard, the level of disclosure that should be examined, or how the examiner is supposed to exclude hindsight from her analysis.

In this article we shall discuss examinations rather than inventorship. It moves from definition and typology, to a presentation of the doctrinal form of Chinese practice of granting, to the problems the

three criteria faces, to a comparative reading of American, European and Japanese practice of granting and then finally, to a suggestion for a restructuring of the standards under Chinese circumstances.

2. The Concept and Typology of AI-Generated Outputs

2.1. Defining AI-Generated Outputs

Within the context of patents, the term “AI-generated outputs” refers to technical solutions generated by the AI system, either without any (direct) human interaction or with minimal human interaction. In Chinese Law, the expression is not used. Under Article 2 of the Patent Law, it is said “a new technical solution proposed for a product, process or improvement thereof” is a “invention”.”[4] Inventions made by AI are featured in the Guidelines for Patent Applications Related to Artificial Intelligence (for Trial Implementation) issued by the China National Intellectual Property Administration (CNIPA).[5] Both do not answer the question what is the category, but both set the stage for a door to be opened; and for a number of years, technical accomplishments influenced by machines have been coming through that door.

Indeed, the statute omit the distinction that the Guidelines make. Inventions using AI are separated into two categories: inventions that claim an AI algorithm/ model are categorized as such, and those that claim a function or field application are considered to be built upon an AI algorithm/ model. The Guidelines also distinguish inventions “made with the assistance of AI” from those “generated by AI”, defining the latter as “created autonomously by artificial intelligence without substantive human contribution”.[6] The definition provides the policy underpinning for the rest of the document, and considerably narrower than the common usage of the term.

Thus, I am using a working category – “AI-generated outputs” – which I stick to the requirements of my study on examination, these outputs being ones that can be proven that the AI system has done substantive and direct generative work on a particular technical solution, and that the content of these outputs is technical in nature and can support a claim. This process can be computation, data processing, combination of candidates, optimization of parameters, iterative search, or any other process — what is important is that the machine generated the solution – it was not simply following a set design made by humans with their hands. “Generation” refers to the way that a solution emerged. It does not suggest any issues of legal personality, and it does not extend to all inventions where a computer has had some role. The key issue to which this article later returns are whether the machine was generatively substantial in contributing (in part or entirety) to the solution and protection of which is sought.

2.2. Instances of AI-Generated Outputs

In machine operation there are three stages of output corresponding to three stages of machine capability. The role of the machine in invention-creation ranges from being a tool, collaboration to autonomy and the creations of each stage are different – that can be examined.

The first has been achieved by narrow intelligence, with the assistance of artificial intelligence. The inventor has the conception, the machine fetches prior art, crunches numbers, generates simulations, calls attention to error and optimization goes on routinely. The basic functions remain human, and the machine's contribution is always functional with computer-aided design, laboratory software and technical databases. For this class of output there is no need for the traditional considerations of novelty, inventiveness and practical applicability to be reconsidered at all: a computer did a bit of the work, as has been the case for 40 years.

The second one is the joint product of the general-intelligence stage. The machine generates a set of candidates based on the goal and constraints set by the humans; the humans filter, tweak and test them to find a claimable outcome. Type is "Interaction. It is not a solution predetermined by man or made entirely outside of man; an examination needs to find the human contribution somewhere else – in the circle of the solution.

The third is the superintelligence output, where the human serves to set an abstract goal, a constraint, maybe a query, and the machine computes, searches and iterates its way to a conclusion, people pick and choose results, verify and file papers. The type leaves no natural person who has contributed creatively, taken to its logical extreme, as contended in the DABUS filings.[7] It is here that the pressures on patent are most pronounced: the role of the human inventor is stripped from the invention, and a statute centered on the natural person inventor seems an anachronism.

3. The Normative Basis for the Patent Examination of AI-Generated Outputs

3.1. The Normative Structure of Patentability Examination

There are three layers of rules on which Chinese grant practice is based, answering different questions. Article 2 asks whether the subject matter is a new technical solution for a product, process or improvement of either. Article 22 is for asking whether the invention is novel, inventive and capable of practical application. Article 26 - Does the specification make it clear and complete to enable a person skilled in the art to perform the invention?[8] The three in combination cover all the bases where a patent can be gained, and, separately fulfill their respective roles; the first one is to confine, the second one is to examine and the third extract the cost of publicity.

There is no condition of grant linked to the use of AI in both Article 2 and Article 22. The provisions are not about tools and instruments by which inventions are made, but to the characteristics of the inventions and conditions of patentability. So, when an examiner sets his sights on an application created by a machine, he starts with what he starts with for all applications: Does the invention make any sense as a technical solution and if yes, does it meet the three requirements? More interesting, doctrinally with AI, is the moment when it causes an alteration of the facts to which the rules are applied.

When it comes to reading, there is no room for error when it comes to division. The subject-matter is determined by the question of "what is being examined," the 3 criteria determine if conditions of grant are met, and the specification requirement determines if the disclosure would enable a person skilled in the art to conduct the invention. The three cannot be interchanged and this difference becomes relevant as soon as it comes to the machine where a difficulty on one layer can easily be misinterpreted as another difficulty on a different layer.

For example, Article 1 specifies the purpose of the law, which is to protect patents; Article 26 puts disclosure as a consideration for granting patents.[9] These provisions continue to be applicable once a machine has entered into the process of invention. The question is not about the norms themselves, but how the norms' application adapts to the previously unknown facts; and one can best examine this by examining each criterion separately, rather than by erecting a new one.

3.2. The Separation of Inventorship from Patent Examination

Machine participation raises a prior question; can a machine be an inventor? The matter comes down to a question of legal personality—one that previously was natural persons in the older law, one that was by legal fiction in the case of corporations, and one that was in relation (and is thus not always legal personality) in the case of foundations or other bodies described as legal persons. The premise is that when fiction can make a company a person why not a machine? The best-known Chinese formulation is the “electronic person” proposed by Guo Shaofei, and explained by Mr. Guo on the basis of the history of lawful persons and representations of autonomy of these systems.[10] Further, more recent proposals weaken the frame: For instance, in 2026, Arikan argues that the discussion is based on the dichotomy between “property” and “personhood,” and that this dichotomy should not be the only one available to determine the “advanced” AI's legal status.[11] There is no absolute doctrine block of any of this. Legal personality is not a biological fact, but a normative one - companies are not persons in nature, but persons in law, and these were never coextensive. For AI, however, what's crucial is not to look human – it's whether the system is sufficiently autonomous and independent to maintain specific legal relations and whether responsibility and the accrual of rights

can be pinned on it. On these terms a limited subject status (statutory and commensurable to autonomy and area of use) is possible to construct. The question is whether it should be given – this article does not seek to tackle that question.

The following two corollaries are worthwhile to state since they are so easily confused: The fact that under current law machines themselves are not considered to have personalities for such situations does not mean that machine-shaped solutions are inherently unpatentable. But a future statute conferring personality would not automatically make such solutions patentable. Inventorship: Who are the persons who MAY be named? Patentability: Does the solution meet the statutory requirements? There are various modes of questioning, in purpose, in practice, and in the supporting evidence provided.

Separating them forms the entirety of what is to come. Technical solutions generated by AI should be tested to see if the criteria for novelty, inventiveness and practicality and full disclosure can still be applied to solutions generated by the machine, and if there has been a change or adjustment to the object of that criteria, the benchmark or the way in which they are tested. So also are the respective questions whether a machine can be an “inventor” or whether a machine-like solution can be patented (whether it is a “process” or a “product”).

4. Challenges Posed by AI-Generated Outputs to Patentability Examination

4.1. The Challenge to Novelty Examination

Novelty under Article 22, is that the invention should not be in the prior art, that is, the technology that was known in the public domain, at home or abroad, prior to the filing date and the conflicting application which was filed earlier and published later.[12] It is not a test whether the solution has been computed by another machine, but a test of the technical content's level of publicity required by the statute, or to a special sub-rule. Machine generation: Involves the disturbance of both limbs. There are many more solutions produced by models than can be examined by an examiner and much of the solutions are quite thin: whether a particular artefact is or is not prior art, as of a certain date, is not always an easy answer. Generation also occurs at a pace that fills a technical acumen: tens of thousands of variants in the afternoon; formally, new, substantively, always recombinations of the known. Accept them all and the novelty of all the subsequent work is drained away; reject them all and an ingenious solution can be lost because a model has published it first without anyone understanding what was published.

The China National Intellectual Property Administration (CNIPA) faced such a challenge in its 2026 decision on “a metallographic preparation method for a tungsten–zirconium alloy,” which occurred during the inventiveness analysis for a patent application. The panel shared its observations on the effect of models, data sources, training precision, and the wording of prompts, which mean that the output of a machine cannot reconstruct the prior art or the knowledge of a person skilled in the relevant art on the date of filing, but is only used as reference.[13] What the research demonstrates is an obvious gulf between what the model says and what the legal facts were, and it becomes acute on the three points which are key to a novelty finding: the fact of disclosure, its date, and its source?

4.2. The Challenge to Inventiveness Examination

The greatest challenge comes in with inventiveness. The examiner considers whether or not the solution might have been apparent to a person with the ordinary knowledge and routine experimental skills of the field. Put a system that can retrieve, combine and predict at the industrial scale and the lack of fit becomes immediately apparent against such a small scale. When the machine turns up some recombined solutions lying far beyond the ordinary technician's capabilities, these solutions may be routine for the machine. When the machine also operates in a space between technical fields which had no traffic with each other, it is hard to specify the knowledge base and the reasoning path which were presupposed at the traditional inquiry, to assemble combinations across the boundary.

Capability is a two way reduction. What is ‘but obvious to the machine’ is ‘inventive’ to the individual; what is ‘inventive’ to the individual is ‘routine’ to the machine; ‘and a standard that can only have one answer cannot easily take into account both’. There is another, not as commonly researched in literature. Indeed, the tendency to objectify inventiveness collides with the never precisely formulated liberties of a statute: “prominent substantive features” and “notable progress,” and when the solutions come pouring out of the machine, their combinatorial relationship becomes murky, their effect has less of a linear link to the benchmark, and then such connections become strained. The denial of reconstruction of the cognition of a person skilled in the art at the filing date as made by the 2026 tungsten–zirconium decision provides a tangible basis for the mismatch.[14]

4.3. The Challenge to Practical Applicability Examination

To be “practically applicable” the invention must be constructible or usable, and it must result in a beneficial effect.[15] The first difficulty is on the part of reproducibility. A once is a once – the result depends on the generative process itself rather than any kind of relatively stable conditions of implementation, in which case the applicant will not be able to claim that the effect is dependent on any particular one of those.

The second challenge is weighing beneficial effects. Machine-generated solutions can have repercussions no one ever imagined and the benefits of the work may be not only on the technical aspects of performance, but on safety, health, environmental grounds, where there is little guidance to be gained from the statutory language, nor is there a reliable method of assessment that the examiner has settled upon.

The third is the dependence of the model. But changing the model, retraining it, changing the seed and the effect may disappear, leaving the gap between the capacity for use and the capacity for stable reproduction of the claimed effect, which is not specified in the statute and has not yet been filled in practice.

5. Extraterritorial Practice and Its Implications for China

5.1. The United States: Delimiting the Boundaries of Grant

The answer from the Americans was inventorship and not examination. Thaler applied for the two new patents, but they were refused by the United States Patent and Trademark Office (USPTO) for lacking a lawful inventor – naming the AI system DABUS as the inventor.[16] But on August 5, 2022, the Court of Appeals for the Federal Circuit affirmed in a case where it construed “individual” in the statutory term “inventor” as a natural person. What is significant is what the court didn't do. It didn't consider whether DABUS could meaningfully create; it did not weigh evidence of its output; it construed the text, the words of the Act, and the architecture of the Act as a whole.

Administrative practice was then done to follow-up the judgment. The Revised Inventorship Guidance for AI-Assisted Inventions was published on November 26, 2025, replacing the previous guidance from 2024, and reiterated that there is only one set of inventorship rules which apply whether or not a machine was involved – the machine may be used as a tool, but it cannot be the inventor.[17] Initially, eligibility carried the rest of the American response, and in July 2024 the USPTO also updated its guidance on the development of AI-related technology and added three examples working such inventions, to be evaluated under the existing provisions of 35 U. S. C. § 101.[18]

5.2. Europe: Refining the Disclosure Requirement

The EPO didn't have to look too far for the innovation, with the machinery already provided for in the EPO's European Patent Convention (EPC), namely the general conditions of patent protection in articles 52 et seq., the novelty requirement in article 54, the inventive step requirement in article 56, the industrial applicability requirement in article 57, and the requirement that the disclosure be sufficiently clear and complete for a person skilled in the art to carry the invention out in article 83.[19]

The Office has found that in order to maintain the unity of the system, the best way to address machine disclosure is by applying Article 83 to machine-specific facts.

The example of T 0161/18 is the most transparent one.[20] The application asserted that this solution was the one based on Machine Learning the general one and specially Artificial Neural Networks (ANN) and very little about how the network was trained. The Technical Boards of Appeal found that a person skilled in the art could not carry the invention out and Article 83 was not fulfilled.[21] It then took the next step of substance – that where the use of the network is the only thing different from the prior-art, but the training is not disclosed, then the use of the network cannot provide the inventive step either.[22]

T 0528/25, decided in 2026, closes the circle.[23] Designation can be satisfied where a natural person with a causal contribution can be identified, even if it was the machine doing the work and the only role of the natural person was to start it up, the Board determined.

5.3. Japan: Elaborating the Inventiveness Inquiry

Japan has gone down a third path, learning through case studies rather than theory, and thus prepared a reservoir of case examples, which an examiner can use without having to provide theoretical background and conditions.

These contributions for 2024 illustrate the level of sensitivity of the Japan Patent Office (JPO).[24]

The latter, Case 37, “Automatic Response Generator for Customer Service Centers,” referred to a contextually large language model which generates customer responses.[25] But the Office held that setting up a trained model to replace a clerk would be something any human agent would do anyway, and thus not inventive merely because of the generative nature of the model. Routine work with humans, with help of a language model, also does not generate value, and the mere use of generative AI is not, without more, a technical contribution.

The published materials have been sectioned generally in respect of: specification and claims, novelty, inventiveness, and patent eligibility, and expressly said to be intended ‘to provide concrete grounds of examination, as the technology evolves, rather than to establish a parallel regime outside of the general patent regime’.[26] This is repeated in the later 2026 materials: neither “generation” nor “participation” raises the bar by itself and “inventiveness”, “disclosure” and “eligibility” analyses return, as before, to the technical features. A word of caution was added in a research published by the Office in 2024. But the new problems are not "yet ready" for a complete re-writing of the examination guidelines, and disclosure questions should be dealt with from time to time, on a field-by-field basis, it concludes.

5.4. Insights from Comparative Law

No specific regime for AI patents, 3 jurisdictions, 3 strategies. The United States defined who was allowed to actually invent and what they could claim; the EPO added in actual facts for the specific machine they were considering into the disclosures; Japan detailed on a case-by-case basis how machine features influence inventiveness. There are apparently three levels of this structure, each of which has been the subject of attention in different jurisdictions: what facts, which factors, how the rules (written without regard for machines in mind) are to be applied? None of the three has been accompanied by a condition of grant, apart from novelty, inventiveness and practical applicability, and there is nothing for China to be first and do so.

There are 2 cuts to the reference. It provides an argument for adjusting examination practice within the existing statute in the short term and for possible legislation on the status of the machine itself in the longer term.

6. Restructuring the Patentability Examination Standards for AI-Generated Outputs

6.1. Novelty

The first modification relates to prior art: generation is a technical fact, while disclosure is a legal fact. When it comes to what is prior, mere creation is not prior, mere ownership is not prior and mere knowledge of a model, or what was generated but not presented, or what no third party could retrieve is not prior. Content is considered to become part of the prior art once it is available to the public through patent publications, academic literature, market devices, databases or open source or any other means of actual dissemination before the actual filing date. Relevant to access, look for substantive accessibility: was the content accessible to the public through reasonable means and could the public obtain and understand it? The wording of the standard is purposefully factual, and the test must rely on verifiable evidence rather than the mere existence of a generation record.

As machine output grows so does the search. The objects of search, neighbouring fields, variant terms – all are extended – but the one to one comparison remains, and it must, for novelty is a property of a single disclosure and not of a statistical aggregation. When machine-generated material moves terms, or introduces synonyms, or renames techniques the identification is based on the meaning of the terms and techniques and not on the wording. No matter how broad the search is, novelty finding will still mean that you need one prior art article that includes every feature of the invention; scattered across several outputs is not enough to anticipate, because it would otherwise be nothing more than a database search.

The other half of the discipline is evidence. Since models, training data, training precision and prompts are different, the output of the language model will not objectively be the prior art or cognition of a person of ordinary skill in the art before the filing date; it can only serve as a reference function for the cognition of another person. Unverified machine output should not be received as proof of prior art, and CNIPA has indicated as much in the 2026 tungsten – zirconium decision: because models, training data, training precision and prompts differ, the output of the language model will not objectively be the prior art or cognition of a person skilled in the art before the filing date; it can only serve as a reference function for the cognition of another person.[27]

6.2. Inventiveness

The person skilled in art must be reconstructed rather than assumed. The baseline is ordinary knowledge of the field and the normal laboratory (experimental) competence, but the toolbox has evolved and so have also the above-mentioned capabilities which are reasonably considered to be obtainable with the construct. Extremism in both directions is undesirable: one would be the machine’s complete exclusion from the construct's world, as if nothing had transpired since the statute was drafted, and the other would be trying to sail today's models back to the earlier filing date. The temporality is statutory, i.e., at the time of filing or at the priority date: were the relevant tools available and had they reached the field?

All three questions are questions of fact, sorting the tools. Was it only afterwards created or was it there? Is it relevant to the current issue or, does it do well in other venues (Being good in one doesn't mean good in another?) Could practitioners really have it or was it inaccessible to them? Once these are met and the machine's capabilities come into the inventiveness analysis; if these conditions are not met then they are outside of the analysis despite how amazing these capabilities are seeming in hindsight. Existence in time, relevance for the technical field, and actual availability – the three are cumulative and proof for each of them is required.

Few people may realize that speed does not equal obviousness, and when a model is generating a thousand candidates in a minute it can be confusing. What the PIOT would naturally have thought of is not part of the volume of generation, but whether or not the person skilled in the art would have arrived at the solution to be claimed starting from the prior art, using only normal tools available at the time, with high probability of success and no need for real, technically significant choices,

modifications, parameter settings or experiments; in other words, what would have been left to the person skilled in the art by the prior art if they had seen it.

Outputs that are written with technical and algorithmic features are not to be dissected and the Patent Examination Guidelines which came into effect in 2026 reflect this: analysis of an output shall focus on the output as a whole (the technical means, the problem solved and the effect achieved) and not separate the technical from the algorithmic. The teaching is of average quality. What is subtle in this regard is that it is human nature, for an examiner to look at such a claim as generated by a machine to view its algorithm as detachable background and to view the other features as the invention.

6.3. Practical Applicability

Implementability and the stability of results should be studied in greater detail than is usually done. Some outputs are accidents – one success in special circumstances, from a multitude of candidates, without explanation of what the success was or if it is likely to happen again. Where the effect is hinged on randomness, on special data conditions on the process that will not be repeated, and the applicant is unable to assert the conditions required for the effect, practical applicability is questionable; the questions to be posed are: Can the solution be made or used even when that one generation is not available under reasonable and stable conditions and still the claimed effect be produced?

The same caution should take place regarding the effect: Does it exist and does it correspond to the claims? Predicting, from huge amounts of data, how some material, drug or process will act, is not an effect, for a prediction is not a useful effect within the meaning of the statute and to make it so would destroy the distinction between prediction and technical teaching. If the application is based on prediction, then the “claimed effect” should be run against experiments, sample data, simulations or products on the shelf (in the jargon of the field) and the examiner should ask: is the effect really a part of the solution being claimed?

Opacity is the last thing that is impractical, for a final time. The fact that the output of the model can be made or used does not depend on whether the output of the model itself can be explained by the model's internals - where implementation and effects can be reliably demonstrated, inability to explain parameter interactions is not a defect. Disclosure is another story, however, and one that should be handled as such! Where a phenomenon is only mentioned under any one of the versions or conditions, and those conditions don't appear to be described, a person skilled in the art cannot carry out the invention, so the defect belongs to the specification, and that's where Article 26 provides for a rescue.

Ethical and social objections can be left for other places. Requirements of the provision of applications that seek to involve prohibited matter, public morals, or the public interest are analyzed in terms of statutory prohibition, as set out in Article 5 and its cognates. Practical applicability is a technical condition of grant rather than a means of value judgment – it is technical – and the condition of use is the practicality of applicability, for in this is the way that the social queries the machine generates is not dissolved.

7. Conclusion

How solutions are made has changed; the use of machines. They have not changed what patent law protects – technological innovation – or the bargaining by which people can be concluded that they are entitled to protection if they provide disclosure. No new gate of patentability has been set up and machine-made outputs will be evaluated in the current patentation practice landscape. The comparative record backs this conclusion up: no fourth regime anywhere and only three jurisdictions which have tried to come up with some variation of the existing rules.

Here are three changes, all of which are of method, not standards. Novelty – separate generation from disclosure and verify the content, date and public accessibility through evidence. Inventiveness: build the so-called person skilled in the art, placing him against the background of the filing date,

where the existence, relevance and availability of the tools would be treated as an established fact to be proven. Practical applicability: test implementation, reality of effects and correspondence with the claims; remit disclosure problems related to model conditions to the specification.

It is for 'calibration' and never for the purpose of raising or lowering the statutory standards – to correct the facts and the evidence on which the examination is to proceed – so that like cases would and should be decided alike, even if the evidence is that a machine has or has not been used. The Guidelines, exemplifying decisions, and examiners' general practice will periodically need to be updated as the tools spread, and the pertinence of any information related to any machine to an invention will need to be determined on a case-by-case basis. The efforts go towards verifiability and predictability.

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