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THE INVENTIVENESS REQUIREMENT IN PATENT LAW

An Exploration of Its Foundations and Functioning

Lodewijk W.P. Pessers

Wolters Kluwer

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List of Abbreviations

APLA	American Patent Law Association
BGH	Bundesgerichtshof
BIE	Bijblad bij de Industriële Eigendom
BPatG	Bundespatentgericht
CA	Court of Appeal
CAFC	Court of Appeals for the Federal Circuit
CC	Circuit Court (before 1912)
CCPA	Court of Customs and Patent Appeals
Ch	Chancery
CP	Common Pleas
EPC	European Patent Convention
EPO	European Patent Office
Ex Ch	Exchequer Chamber
F2d	Federal Reporter, second series
F3d	Federal Reporter, third series
Fed Cir	Federal Circuit
FSupp	Federal Reporter, supplement
Grif Pat Cas	Griffin's Patent Cases
GRUR (Int)	Gewerblicher Rechtsschutz und Urheberrecht (Internationaler Teil)
HL	House of Lords

IIC	International Review of Intellectual Property and Competition Law
IPR	Intellectual Property Rights
J	Justice
JPOS	Journal of the Patent Office Society
JPTOS	Journal of the Patent and Trademark Office Society
KB	King's Bench
LJ	Lord Justice
Mitt	Mitteilungen der deutschen Patentanwälte
MR	Master of the Rolls
NJ	Nederlandse Jurisprudentie
Noy	Noy's Kings Bench Reports
PCT	Patent Cooperation Treaty
RG	Reichsgericht
TBA	Technical Board of Appeal
USPTO	United States Patent and Trademark Office
VC	Vice Chancellor
QB	Queen's Bench
Web Pat Cas	Webster's Patent Cases
WIPO	World Intellectual Property Organization

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Introduction

1 THE INVENTIVENESS REQUIREMENT

When confronted with the question whether a certain invention possessed enough inventive quality to qualify for patent protection, Mr Justice Tomlin once remarked:

> Nobody [...] has told me, and I do not suppose that anybody will ever tell me, what is the precise characteristic or quality the presence of which distinguishes invention from a workshop improvement. Day is day, and night is night, but who shall tell where day ends or night begins?[1]

It is this 'legal twilight' that constitutes the subject of the present study. Judges, legislators, commentators and scholars have long tried to characterize the so-called 'inventiveness requirement' in patent law, but definitions were always destined to be lacking in precision, workability or both. Yet the concept is seemingly easy: in order to be patentable, an invention should be more than a trifle. That is, it must show an 'extra' beyond mere novelty. However, when it comes to giving substance to this requirement its subjective nature immediately creates serious barriers. For instance, how can one answer this question of inventiveness without resorting to highly personal views? Or, to make it even more complicated, what is the right question in the first place?

These, of course, are ingredients for doctrinal struggle. It is therefore hardly surprising that the concept of inventiveness has shown many faces through history. Sometimes it was simply left untouched as the subject was

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1. *Samuel Parkes & Co v. Cocker Brothers* (1929) 46 RPC 241, CA, 248.

deemed too fundamental (or perhaps: too hard) for further elaboration. At other moments, however, jurists have thrown themselves into the definition problem with abandon, producing extensive models and guidelines intended to rid the requirement of its unpredictability and subjectivity.

It must be said, these ongoing efforts to come to grips with the concept of inventiveness arouse interest, fascination or sometimes even a mix of amusement and pity. Yet this entertaining and colourful parade of competing views, marching through the heart of patent law,[2] may also be seen as an 'elephant in the room'. What does it mean when the question of patentworthiness, so essential to the goal and functioning of the whole system, has led to widely varying answers, both over time and at a time?[3] This might leave one doubting whether the justifications of patent law are as solid as they seem.

But before elaborating upon the importance of the inventiveness requirement within its broader context, first some words should be penned on the nature and purpose of this study and, very briefly, on the structure of this introduction.

In the twentieth and twenty-first centuries, the inventiveness requirement has become a much-debated subject in patent law literature. One could even say that there is hardly any facet that has not been discussed in extensive detail. However, most of the time such contributions are tied to a specific aspect, a specific jurisdiction and a specific moment in time. Yet broad, diachronic approaches are relatively scarce, especially when this means that more than a few decades are covered.[4] It is at this point that the

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2. Not without reason, the inventiveness requirement is sometimes dubbed 'the ultimate condition of patentability'. See, for example, JF Witherspoon (ed.), *Nonobviousness – The Ultimate Condition of Patentability* (Bureau of National Affairs, Washington DC 1980).
3. Also in our time, the various inventiveness standards are subjects of debate. Some scholars argue that the current criteria are simply erroneous or far too lenient. See, for example, Lachlan James who holds that the condition should be understood as referring to the existence of 'novel associations between previously disparate concepts.' Hazel Moir argues that an immediate upward adjustment of the inventiveness threshold is called for. In her eyes, the relevant question should be whether 'a real contribution to human knowledge' can be discerned. See L James, 'A Neuropsychological Analysis of the Law of Obviousness' in P Drahos (ed.), *Death of Patents* (Lawtext Publishing, London 2005) 67, 82 and HVJ Moir, *Patent Policy and Innovation* (Edward Elgar, Cheltenham 2013) 9, 46 and 155.
4. Notable exceptions are the highly recommendable contributions of Friedrich-Karl Beier, John Duffy and David Slopek. See FK Beier, 'The Inventive Step in its Historical Development' (1986) 17 International Review of Intellectual Property and Competition Law 301; JF Duffy, 'Inventing Invention: A Case Study of Legal Innovation' (2007) 86 Texas Law Review 1 and DEF Slopek, *Die Ökonomie der Erfindungshöhe*, Düsseldorfer Rechtswissenschaftliche Schriften, vol 106 (Nomos, Baden-Baden 2012). Besides these authors who focus specifically on the inventiveness requirement, also Mireille Buydens deserves mention. In her book *Propriété intellectuelle: évolution historique et philosophique*, she follows the rise and further evolution of the intellectual property concept (including patents) since antiquity. Her broad and erudite approach makes this

present research will try to make a contribution by adopting a chronological-geographic scope that is larger than in any previous study. As the title indicates, the overarching question will be how the requirement of inventiveness has evolved over time, that is, from the very first moment that we can distinguish its contours up to the present day. Of course, a proper treatment of this broad subject necessarily requires further refinement and structuring. Therefore, particular attention will be paid to three sub-questions that serve as the skeleton of this study.

The first of these regards the aspect of 'periodization': what are the historical phases that can be discerned in the requirement's evolution? And what are the grounds on which such a division can be made? Although chronological categorizations of this kind are never completely free from arbitrariness, they are nevertheless instrumental in organizing our knowledge and creating a necessary amount of 'overview'. As the requirement of inventiveness has long remained an ill-defined concept, this question as to its historical articulation is crucial to make preliminary sense of its evolution.

At the same time, it is important to note that the requirement of inventiveness cannot be understood solely in its legal context. Not infrequently, social, political and/or economic facts have influenced how the requirement developed through history. Therefore, the second sub-question is concerned with the relevant extra-legal aspects: how, and to what extent, has the requirement of inventiveness been shaped by 'external' forces? As we will see, this interaction (or sometimes: the lack of interaction) between the doctrine and its surroundings sheds an interesting light on how this requirement has (not) been employed as a policy instrument.

These questions of 'characterization' almost automatically take us to the next step, the one of 'differentiation'. In other words: may we speak of the evolution of *the inventiveness requirement* in the singular, or is the doctrine in fact more varied in its manifestations? Hardly surprisingly, the latter has been (and still is) the case. Despite the existence of broad, trans-border tendencies, national idiosyncrasies – or even more than that – can be observed as well. The third sub-question will therefore look at the similarities and dissimilarities between the various jurisdictions under examination, i.e., the United States, the United Kingdom, Germany and the Netherlands. To what extent differed the paths that the doctrine took in these countries? And can we identify reasons for divergence?

As said, however, this introduction will first discuss, more in general, why the requirement of inventiveness deserves our attention. And, not unimportantly, why this is particularly true in this day and age, see section 2. Thereafter, attention will be turned to the aim and structure of this research in section 3 and its methodology in section 4. Section 5 looks at some

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book a very valuable reference for any (historical) research on the fundamentals of patent law. See M Buydens, *Propriété intellectuelle: évolution historique et philosophique* (Bruylant, Brussels 2012).

demarcation and chronology issues: how is the term 'patent (law)' to be understood given the historical-semantic uncertainties associated with it? And how broad is the chronological scope of this study? In section 6, the various jurisdictions that will be examined are introduced. Finally, section 7 contains a few terminological remarks.

2 'GLOBAL PATENT WARMING'

Over the last three decades, the importance of patents as instruments for the protection of industrial property has grown dramatically. Probably most telling are the statistics coming from the United States Patent and Trademark Office (USPTO): while in the year 1980 patent grants totalled just above 66,000, the number has risen to well over 300,000 in 2013.[5] Similar trends, albeit a bit more modest, can be observed in Europe. And in countries with a shorter patent tradition, figures are telling the same, or an even more remarkable story. In China, for example, the number of grants has increased more than tenfold since the beginning of this century: from around 105,000 in 2000 to more than 1,300,000 in 2013.[6]

Looking at these developments optimistically, one might see patent systems all over the world meeting apparent needs. In addition, this upward trend could easily be taken as a happy indication that we are living in times of ever-quickening innovation. After all, patents and technological progress are not infrequently interpreted as correlated variables. Illustrative, in this regard, are the words of the former Director of the USPTO James E. Rogan, who remarked in 2002 that 'the growth in patent applications is a boon for America's economy, as well as contributing to our genius for innovation'.[7] In a somewhat similar vein, the EPO President Benoît Battistelli holds that 'patents are key drivers for innovation, economic success and employment'.[8]

By stressing the salutary effects of industrial property protection, one may easily come to believe that 'more' is generally 'better'. On closer inspection, however, it appears that not all is well in the 'pro-patent era'.[9] The rapid growth of applications and grants has engendered a series of problems, some acute and clearly visible, others more diffuse or concealed.[10] A number of scholars, especially in the United States, even go so far as to

5. See the US Patent Statistics Chart 1963-2013, published by the USPTO on its website at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm.
6. For a complete overview, see the website of SIPO at http://english.sipo.gov.cn/statistics/.
7. Prepared remarks of JE Rogan during hearings on 'Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy', 6 February 2002.
8. B Battistelli during a press event hosted jointly by the EPO and Siemens, Munich 23 March 2012. Available online at http://tinyurl.com/mdjqk2g.
9. To use the term employed by O Granstrand in F Fagerberg, DC Mowery, RR Nelson (eds), *The Oxford Handbook of Innovation* (Oxford University Press, Oxford 2005) 268.
10. See also Buydens, *Propriété intellectuelle* (2012) 418-423.

speak of a 'patent crisis'.[11] Leaving aside the question of whether this is an appropriate label, it is clear that the ongoing expansion of patent systems is not universally greeted with approval. To give a preliminary idea of what these risks and drawbacks might be, we will now pass a few of them in brief review.

First of all, there are considerable backlogs that have built up in patent offices over the last decades as resources and staff did not always grow in parallel with the workload.[12] For example, in the USPTO the total number of pending applications rose from around 200,000 by the end of the 1980s to more than a million in 2013, while the EPO showed a rise from around 100,000 to more than 600,000.[13] As a result, the processing time of applications has often increased substantially.

Obviously, these delays affect (aspirant-)applicants as patenting becomes surrounded with a large degree of uncertainty. After all, when it takes much time to determine whether an exclusionary right will eventually be granted, its immediate deterrent effect is sapped.[14] In addition, not only the eventual issue of the patent remains unsure as long as the application is pending, but also its precise scope. This, in turn, could make inventions less attractive investment objects as risks are harder to assess.

Of course, this uncertainty works both ways: not only the applicant, but also the market is confronted with potential exclusionary rights that may, or may not, materialize. This will similarly diminish the possibility to make informed decisions about product development.[15] The uncertainties and complexities increase even further when the number of pending applications is very large. Some therefore conclude, rather dispiritedly, that in some fields

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11. D Burk and M Lemley, *The Patent Crisis and How the Courts Can Solve It* (University of Chicago Press, Chicago 2009); National Research Council, Committee on Intellectual Property Rights in the Knowledge-Based Economy, M Myers, RC Levin, SA Merrill (eds), *A Patent System for the 21st Century* (The National Academies Press, Washington DC 2004); PS Menell, 'The Property Rights Movement's Embrace of Intellectual Property: True Love or Doomed Relationship?' (2007) 34 Ecology Law Quarterly 713, 737; BS Noveck, '"Peer to Patent": Collective Intelligence, Open Review, and Patent Reform' (2006) 20 Harvard Journal of Law & Technology 123, 123. See also J Masur, 'Patent Inflation' (2011) 121 The Yale Law Journal 3, 470, 477, fn 26.
12. See also M Mejer and B van Pottelsberghe de la Potterie, 'Patent backlogs at USPTO and EPO: systemic failure vs deliberate delays' (2011) 33 World Patent Information 2, 122-127 and WK Mabey, 'Deconstructing the Patent Application Backlog' (2010) 92 Journal of the Patent Office Society 208.
13. USPTO Performance and Accountability Report for fiscal year 2013 at 190, accessible online at http://www.uspto.gov/about/stratplan/ar/index.jsp; WIPO, World Intellectual Property Indicators 2013 at 86, accessible online at http://www.wipo.int/ipstats/en/wipi/; D Harhoff and S Wagner, *Economic Analyses of the European Patent System* (Deutscher Universitätsverlag, Wiesbaden 2007) 53.
14. PE Geller, 'International Patent Utopia' (2003) 85 Journal of the Patent Office Society 582, 589.
15. WK Mabey, 'Deconstructing the Patent Application Backlog' (2010) 92 Journal of the Patent Office Society 208, 238.

'[i]t is nearly impossible to determine with any degree of accuracy where one's actions fall within the multitude of unclear and overlapping patent rights, because there are simply too many variables to consider'.[16] Although the severity of this problem will vary per country and per industry, it is obvious that an upsurge in patent applications and grants may compromise efficient processing and legal certainty for both applicants and their competitors.

The second consequence to be mentioned concerns the quality of examinations. It is widely assumed that the growing workload in patent offices does somehow influence the rigour of eligibility assessments.[17] In theory, this might result in either quicker rejections or quicker grants. In practice, however, the latter is more likely than the former as rejections typically come with much greater administrative burdens than do grants.[18] Some have argued that this phenomenon is bound to feed on itself. When attempts to enhance efficiency make examinations less thorough, more applicants will 'take a chance'. As a result, backlogs are likely to grow even further which, in turn, leads to assessments becoming less scrupulous still. If the expansion of patent systems is indeed (partially) triggered by more lenient examinations, then the causal link with flourishing innovation becomes much less plausible. Worse still, excessive patenting might even have hampering effects on innovative activity. The above example of uncertainty flowing from increased processing times is only one possible contributing factor in this regard.

The third and last aspect that should be mentioned in this brief overview is the broader costs of global patent warming. First of all, one might think of costs in the monetary sense of the word. After all, the reassurance that most patent offices do not depend on external funding, but rather on fees paid by applicants and patentees, is hardly convincing. In fact, such expenses will typically translate into higher prices for end products. And the same goes for other expenditures that are likely to rise when patent systems become inflated, such as those associated with increased (opportunistic) litigation and

16. *Ibid.*
17. See, among many others, AB Jaffe and J Lerner, *Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress, and What to Do About It* (Princeton University Press, Princeton NJ 2011) 175-176; BH Hall, SJH Graham, D Harhoff and D Mowery, 'Prospects for Improving U.S. Patent Quality via Post-grant Opposition' (2003) IBER Working Paper No. E03-329, Institute of Business and Economic Research, University of California, 4 and KW Willoughby, 'Strategies for Solving the Problems of Backlog and Unreliable Examination Quality in the Global Patent System' (2008) Draft Working Paper, Max Planck Institute for Intellectual Property and Competition Law, 7.
18. RM Hilty, 'The Role of Patent Quality in Europe' (2009) Research Paper No 11-11, Max Planck Institute for Intellectual Property and Competition Law, at 11 and Z Lei and BD Wright, 'Why Weak Patents? Rational Ignorance or Pro-"Customer" Tilt?' (2009) CELS 2009 4th Annual Conference on Empirical Legal Studies Paper, available online at http://tinyurl.com/k9og5by.

licensing.[19] However, it is not only the financial but also the 'credibility costs' that deserve attention. As one commentator put it:

> The 'problem' is that patents being issued today do not generate the confidence and respect in the public that, as a matter of public policy, one would expect. The bad press and attacks on patents in general have eroded confidence in all patents. An inventor who obtains a patent cannot enjoy as much of the benefits of the patent as public policy would dictate.[20]

Of course, the question whether patent systems are indeed dangerously overheating and whether the consequences are as dire as sometimes predicted deserves a more extensive treatment than can be offered here. However, we should at least observe that the balance of the patent system is becoming a topic of much interest.

As an almost automatic consequence of this recent focus on 'balance' also the subject of this research, the requirement of inventiveness, attracts considerable attention. After all, if this criterion is indeed 'the ultimate condition of patentability',[21] then one might wonder if it is still functioning as intended. That is, if the indications of patent inflation are to be taken seriously, might it be the case that changes in this doctrine are playing a questionable role? Or, metaphorically speaking, should we conclude that the gatekeeper of our patent fortress has gradually become less vigilant – even to such a degree that the whole patent empire may be put in danger?

The premise of this question is, evidently, that the strictness of the inventiveness requirement is indeed closely connected with the number of patents being granted. Even if this assumption is rather uncontroversial, it still needs some nuancing. Most importantly, although it is one of the major intrinsic factors,[22] it is certainly not the only one. Other aspects of a patent system, such as the definition of patentable subject matter, the level of fees or the possibility for interested parties to bring opposition proceedings, also have a bearing on the volume of applications and grants. This places any research that is concerned with a specific part of the patent system in a necessary perspective: in this field of law, causes and effects can hardly ever be established with full certainty since the number of factors is simply too large: relationships, as a result, often rest on plausibility, not on provability.

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19. MJ Meurer, 'Controlling Opportunistic and Anti-Competitive Intellectual Property Litigation' (2003) 44 Boston College Law Review 509, 540.
20. R Krajec, cited in B van Pottelsberghe de la Potterie, *Lost Property: The European Patent System and Why It Doesn't Work* (Bruegel Blueprint Series, Brussel 2009) 33.
21. Derived from Witherspoon (ed), *Nonobviousness – The Ultimate Condition of Patentability* (1980).
22. Here, 'intrinsic' means that the factor pertains to the patent system itself. Of course, there are also many extrinsic factors that may influence the number of patent grants, e.g., the willingness among inventors to rely on patents for the protection of industrial property.