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Case No: A3/2020/1851

IN THE COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
INTELLECTUAL PROPERTY LIST
PATENTS COURT

The Hon Mr Justice Marcus Smith
[2020] EWHC 2412 (Pat)

In the matter of the PATENTS ACT 1977

And in the matter of patent applications GB 1816909.4 and GB 1818161.0 in the name of
Dr Stephen Thaler

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 21 September 2021

Before :

LORD JUSTICE ARNOLD
LADY JUSTICE ELISABETH LAING
and
LORD JUSTICE BIRSS

Between :

STEPHEN THALER	<u>Appellant</u>
- and -	
COMPTROLLER GENERAL OF PATENTS TRADE MARKS AND DESIGNS	<u>Respondent</u>

Robert Jehan and Ryan Abbott (instructed by Williams Powell) for the Appellant
Stuart Baran (instructed by Treasury Solicitor) for the Respondent

Hearing date : 27th July 2021

Approved Judgment

Covid-19 Protocol: This judgment was handed down remotely by circulation to the parties' representatives by email, release to BAILII and publication on the Courts and Tribunals Judiciary website. The date and time for hand-down is deemed to be at 10:30am on Tuesday, 21 September 2021.

Lord Justice Birss:

Introduction

1. At first sight, and given the way this appeal is presented by both parties, the case appears to be about artificial intelligence and whether AI-based machines can make patentable inventions. In fact this case primarily relates to the correct way to process patent applications through the Patent Office and turns on material which was either buried in the papers but ignored in the written and oral argument, or not referred to at all. It is an object lesson in the risks of advocacy being distracted by glamour.
2. The appeal arises from a decision made in the UK Intellectual Property Office (UKIPO) of Mr Huw Jones, Deputy Director acting for the Comptroller (BL O/741/19). The result of the decision was the failure of two patent applications designating an artificial intelligence machine as the inventor. What happened was that, contrary to the wishes of the applicant, Dr Stephen Thaler, who wanted them to proceed, the UKIPO held that those application were deemed to be withdrawn. The reason for this was because the statement of inventorship form was held not to satisfy s13(2) of the Patents Act 1977, even though there is no suggestion that Dr Thaler has done anything other than complete it fully and honestly. Nevertheless as a result the applications have failed.
3. The two patent applications – GB18116909.4 and GB1818161.0 – were filed on 17th October 2018 and 7th November 2018 respectively by Dr Thaler. The first is entitled “Food Container” and concerns the shape of parts of packaging for food. The second is entitled “Devices and Methods for Attracting Enhanced Attention”, and is a form of flashing light. On the face of it each discloses a potentially patentable invention, that is to say patentable as defined by s1 of the 1977 Act. None of those questions are in issue.
4. Patent Form 1, the Request for Grant form, stated that Dr Thaler was not the inventor of the inventions. This is not uncommon and arises, for example, where a company applies for a patent for an invention made by an employee. The IPO informed Dr Thaler that he would need to file a statement of inventorship within 16 months of the filing date of the applications in accordance with s. 13(2) of the 1977 Act.
5. The filing of the statement of inventorship took place on 24th July 2019. Since then the applications have proceeded together.
6. The original form, in the section for the Family Name of the Inventor, gave the name “DABUS”, which is the name of Dr Thaler’s AI machine. In response to the box requiring Dr Thaler to indicate how he had the right to be granted a patent, Dr Thaler wrote “*by ownership of the creativity machine ‘DABUS’*”. Dr Thaler filed an explanation stating that the invention was generated by DABUS and briefly explained why Dr Thaler said he should be granted a patent.
7. On 8th August 2019, the IPO responded stating Dr Thaler had failed to comply with s. 13(2) of the 1977 Act which required him to identify a person as the inventor and to indicate how he had derived his rights from that person.

8. Dr Thaler filed an Amended Form 7 on 28th August 2019 declaring that “*the applicant identified no person or persons whom he believes to be an inventor as the invention was entirely and solely conceived by DABUS*”. Dr Thaler requested a hearing on the matter. It is also now clear and undisputed from the material now available that not only was Dr Thaler the owner of DABUS but he was also its creator and was the person who set it up to run to produce the inventions in issue.
9. The relevant legislation is s7 and s13 of the Patents Act 1977. Section 7 of the 1977 states:

Right to apply for and obtain a patent.

(1) Any person may make an application for a patent either alone or jointly with another.

(2) A patent for an invention may be granted—

(a) primarily to the inventor or joint inventors;

(b) in preference to the foregoing, to any person or persons who, by virtue of any enactment or rule of law, or any foreign law or treaty or international convention, or by virtue of an enforceable term of any agreement entered into with the inventor before the making of the invention, was or were at the time of the making of the invention entitled to the whole of the property in it (other than equitable interests) in the United Kingdom;

(c) in any event, to the successor or successors in title of any person or persons mentioned in paragraph (a) or (b) above or any person so mentioned and the successor or successors in title of another person so mentioned;

and to no other person.

(3) In this Act “inventor” in relation to an invention means the actual deviser of the invention and “joint inventor” shall be construed accordingly.

(4) Except so far as the contrary is established, a person who makes an application for a patent shall be taken to be the person who is entitled under subsection (2) above to be granted a patent and two or more persons who make such an application jointly shall be taken to be the persons so entitled.

10. The scheme of the section is that any person may make an application (s7(1)) and then s7(2) defines the persons to whom a patent may be granted, also stating that it may be granted to no other persons. S7(3) provides a definition of the inventor as the actual deviser of the invention and s7(4) provides for a rebuttable presumption that the person making a patent application is entitled to be granted the patent.
11. There are three sub-classes in s7(2) – (a) the inventor, (b) any person who is the first owner of the “property in” the invention at the time of the making of the invention, and (c) successors in title to (a) or (b). The exact nature of what the Act means by the property in the invention is unclear although it may not matter in practice. In *Yeda Research and Development Company Ltd v. Rhone-Poulenc Rorer International Holdings* [2007] UKHL 43 at [53] Lord Walker described the property right which

comes into existence the moment the invention is made and before an application is made as a sort of inchoate property right. Whatever its nature, the right must include the right to apply for and to be granted a patent for the invention.

12. The other relevant part of the legislation is section 13 of the Act. It provides:

Mention of inventor.

(1) The inventor or joint inventors of an invention shall have a right to be mentioned as such in any patent granted for the invention and shall also have a right to be so mentioned if possible in any published application for a patent for the invention and, if not so mentioned, a right to be so mentioned in accordance with rules in a prescribed document.

(2) Unless he has already given the Patent Office the information hereinafter mentioned, an applicant for a patent shall within the prescribed period file with the Patent Office a statement—

(a) identifying the person or persons whom he believes to be the inventor or inventors; and

(b) where the applicant is not the sole inventor or the applicants are not the joint inventors, indicating the derivation of his or their right to be granted the patent;

and, if he fails to do so, the application shall be taken to be withdrawn.

(3) Where a person has been mentioned as sole or joint inventor in pursuance of this section, any other person who alleges that the former ought not to have been so mentioned may at any time apply to the comptroller for a certificate to that effect, and the comptroller may issue such a certificate; and if he does so, he shall accordingly rectify any undistributed copies of the patent and of any documents prescribed for the purposes of subsection (1) above.

13. The section provides that inventors have the right to be mentioned in the patent (s13(1)). During the application process the applicant must provide a statement containing certain information and if that is not provided within the appropriate time the application is deemed withdrawn (s13(2)). Two kinds of information are required – about inventorship (13(2)(a)) and the derivation of the applicant’s right to grant (s13(2)(b)). Patent Form 7 “*Statement of inventorship and of right of grant of a patent*” is the relevant form. Finally under s13(3) disputes about inventorship can be resolved.

14. The hearing before Mr Jones was on 14th November 2019. The decision was against Dr Thaler, concluding at paragraph 30 as follows:

“30. I have found that DABUS is not a person as envisaged by sections 7 and 13 of the Act and so cannot be considered an inventor. However, even if I am wrong on this point, the applicant is still not entitled to apply for a patent simply by virtue of ownership of DABUS, because a satisfactory derivation of right has not been provided. The applications shall be taken to

be withdrawn at the expiry of the sixteen- month period specified by rule 10(3).”

15. Thus the failure was on two grounds: DABUS was not a person and so cannot be the inventor and, separately, Dr Thaler was not entitled to apply for the patents.
16. Dr Thaler appealed this refusal to the High Court, where his appeal was dismissed by Marcus Smith J ([2020] EWHC 2412 (Pat)). The judgment of the High Court upheld the decision on both grounds.
17. Permission to appeal to this court was given by Floyd LJ on the basis of an “*other compelling reason*”.

The Judgment of the High Court

18. The judge recognised that it was common ground that only a person could make an application for a patent under s. 7(1) (judgment paragraphs [34]-[36]) and noted that DABUS was not the applicant. The applicant was Dr Thaler and so s7(1) is satisfied. The appeal was dismissed for three reasons. First that DABUS could not be an inventor because it was not a person, second that Dr Thaler had not established a right to be granted the patent, and third that the Deputy Director had been correct to find that the applications were deemed withdrawn under s13. I take these in turn.
19. On the first issue the judge held that the natural meaning of s. 7(3) was that the inventor is a person. The court noted that the meaning of this expression was addressed in *Yeda*. At paragraph [20] Lord Hoffmann said this:

“The inventor is defined in section 7(3) as “the actual deviser of the invention”. The word “actual” denotes a contrast with a deemed or pretended deviser of the invention; it means, as Laddie J said in *University of Southampton’s Applications* [2005] RPC 220, 234, the natural person who “came up with the inventive concept.” It is not enough that someone contributed to the claims, because they may include non-patentable integers derived from prior art: see *Henry Brothers (Magherafelt) Ltd v Ministry of Defence* [1997] RPC 693, 706; [1999] RPC 442. As Laddie J said in the *University of Southampton* case, the “contribution must be to the formulation of the inventive concept”. Deciding upon inventorship will therefore involve assessing the evidence adduced by the parties as to the nature of the inventive concept and who contributed to it. In some cases this may be quite complex because the inventive concept is a relationship of discontinuity between the claimed invention and the prior art. Inventors themselves will often not know exactly where it lies.”

20. The judge also made the point that the idea of an “inventive step” as something not obvious to a skilled person in the art suggested that inventors are natural persons as the concept suggests a matter arising from the mind of a natural person (paragraph [45(3)(c)]).

21. The judge also held that the scheme of the Act as a whole is on the footing that patents can only be granted to persons. The various members of the classes in s. 7(2)(a), (b) and (c) must all be persons because only persons can have or be granted rights. S7(2)(a) provides that patents are primarily to be granted to inventors and so inventors must be persons.
22. The court also held that the three classes to whom a patent may be granted be set out in s7(2) all concerned the “*transfer (in different ways) of a right that originally vested in the inventor*” (paragraph 45(4)). Therefore “*it follows that the persons falling within Classes (b) and (c) can only derive their rights...from an inventor, who must be capable of holding and transferring property, viz the invention and the right to apply for a patent*” (paragraph 45(4)).
23. On the second issue, the judge held that Dr Thaler could perhaps have claimed a right to be granted a patent under s7(2)(a) – as the inventor - but he positively did not advance such a case (judgment paragraph 49(3)(d)). Although the judge was prepared to accept as a general rule that the owner of a thing, such as a tree, is the owner of the fruits of that thing, he held there were no such rules in the context of patents. Dr Thaler could not acquire the right to be granted a patent via either s7(2)(b) or (c) because both sections required that the inventor must have transferred the right to apply to the applicant (paragraph 49(3)(c)) and that cannot be the case because DABUS could not do that, because it is not a person. Thus overall Dr Thaler’s contention that he is entitled to the grant of the patents was held to be hopeless and bound to fail (paragraph 49).
24. On the third issue the judge rejected the appellant’s submission that s13 does not permit the Comptroller to use the section as a mechanism to refuse a patent application by refusing to accept a statement of inventorship from Dr Thaler which honestly and correctly identifies the actual deviser of the invention and indicates how Dr Thaler derives the right to the patent. The reasons were as follows.
25. To allow a patent application to succeed when all that was put forward by the applicant was an honest albeit ill-founded belief in the right to be granted the patent would render the provisions of s7 otiose (paragraph 29(2)). Yeda at [18] explains that s7 is an exhaustive code for determining who is entitled to be granted a patent (paragraph 29(3)). Unless the applicant can bring himself within the parameters of section 7 then the Comptroller is “*justified – indeed obliged*” in finding that the application is insufficient and liable to be deemed withdrawn (paragraph 29(4)).
26. It is true that s13(2) refers to the subjective state of mind of the applicant by requiring identification of who the applicant “believes” is the inventor (s13(2)(a)) and to “indicate” the derivation of the right to be granted (s13(2)(b)). Flaws in the identification of inventors, or in the indications of the right of derivation, will not necessarily be picked up by the Comptroller and do not prevent the grant. However where an error has been made any patent granted is liable to be revoked under s72(1)(b). Therefore if a flaw is spotted before grant, so that an application is bad on its face and incapable of justification under s7 the Comptroller will be justified in refusing to proceed with the application (paragraph 29(5) to (8) and paragraph 30)). The presumption in s7(4) is neither irrebuttable nor preclusive of investigation.

Grounds of Appeal

27. On appeal to this court Dr Thaler’s grounds of appeal are discursive. However the appeal can be summarised into three core questions:
 - i) Does the 1977 Act require that an inventor be a person?
 - ii) What is s. 13 of the 1977 Act for, and how does it work?
 - iii) What is the right response to the information Dr Thaler has provided under s13(2)?
28. The Comptroller also served a respondent’s notice relating to part of the reasoning below which referred to a general rule about the ownership of a thing conferring ownership over what is produced by that thing. While there is no doubt such a rule about physical objects like fruit, the submission is that there is no such rule in relation to intangible rights such as intellectual property.
29. The parties’ submissions were wide-ranging. The appellant’s case was frequently put on the basis of what the law ought to be rather than what it was. The Comptroller’s case involved repeated submissions that since a consultation about AI was underway the appeal must be dismissed. Neither of these points advanced the issues.
30. Briefly, Dr Thaler’s submissions on the issues were that definition of the inventor as the “actual deviser” of an invention pointedly did not refer to the need for the inventor to be a person. While the Act was clearly written on the assumption that inventors were persons, that was not and ought not to be a requirement of the law. Dr Thaler could derive the right to apply for and be granted the patents in these circumstances. The judge was right about the ownership of the fruit produced by a tree and, by analogy with the common law of accession (referring to *Blackstone’s Commentary on the Laws of England*), Dr Thaler acquired the right to be granted patents for inventions made by his machine. The judge ought to have held that s13 was satisfied, since it only required a statement of belief about inventorship and an indication of the derivation of the right to apply.
31. Counsel for the Comptroller submitted that for the purposes of this appeal the Comptroller did not dispute three matters. First that DABUS was the actual deviser of the inventions, second that the inventions were patentable (in other words at this stage, before a search, they can be assumed to be potentially patentable), and third that Dr Thaler was the owner and creator of DABUS and the person who set it up to create the inventions in this case. However none of this made DABUS the inventor because the law required inventors to be persons. Nor did Dr Thaler have the right to be granted these patents, essentially for the reasons given by the judge, although counsel submitted that the judge’s reference to the need for a “transfer” could have been better expressed. In relation to s13(2), that provision allowed and required the Comptroller to make the decisions in this case.

History

32. Neither party referred to the patent legislation before the 1977 Act but it provides answers to many of the issues on this appeal and so I will address it first. The history is relevant to all three issues in this appeal.
33. Nowadays it is rarely necessary to start an examination of patent law with s6 of the Statute of Monopolies of 1623, but in this case it is relevant. Under the Statute of Monopolies what was permissible was the grant of patents “to the true and first inventor”. The Act did not permit a grant to anyone else and (see below) and until developments in the twentieth century it was not possible to assign the right to be granted a patent. Also it was clear that the word inventor in the phrase “true and first inventor” did not bear the meaning it has today. As the authors of the 11th (1965) Edition of *Terrell* explained in paragraph 77:
- “There is no doubt therefore, that the words ‘true and first inventor’ in the Statute of Monopolies were intended to include both:
- (1) true and first inventors (in the modern popular sense), and
- (2) true and first importers into the realm.”
34. Thus the true and first inventor could be an importer.
35. Under s1 of the Patents Act 1949 Act (‘the 1949 Act’) applications could only be made by a person claiming to be the true and first inventor or by their assignee. In this respect the 1949 Act had made a significant change to the law. The true and first inventor’s right to be granted a patent was made assignable by that Act. As *Terrell* (11th Edn) explains, this was a substantial change (paragraph 89). While there were no formalities required for a valid assignment, *Terrell* explains that when the application was made by an assignee, an assent in writing by the true and first inventor to the making of the application, also had to be filed (s2(2) of the 1949 Act, paragraph 89).
36. Section 2(3) of the 1949 Act also required that every application had to state that “the applicant is in possession of the invention”, had to name the person claiming to be the true and first inventor, and had to state that the applicant believed that that person was the true and first inventor. Section 4(5) also provided for rules to be made about declarations of inventorship.
37. It is a safe assumption that one consequence of the change in the law whereby the grantee of a patent could now be an assignee was the introduction by s16 of the 1949 Act of the concept of “mention of the inventor”. The relevant parts of the section are s16(1) and (2) and are set out below. The remaining parts are procedural. As far as I am aware it is this section which introduced into UK law the concept of the actual deviser of the invention. The relevant parts of s16 are:
- “16(1) if the comptroller is satisfied, upon a request or claim made in accordance with the provisions of this section –
- (a) that the person in respect of or by whom the request is made is the inventor of an invention in respect of which

application for a patent has been made, or of a substantial part of that invention; and

(b) that the application for the patent is a direct consequence of his being the inventor,

the comptroller shall, subject to the provisions of this section, cause him to be mentioned as inventor in any patent granted in pursuance of the application, in the complete specification, and in the register of patents:

Provided that the mention of any person as inventor under this section shall not confer or derogate from any rights under the patent.

(2) For the purposes of this section *the actual deviser of an invention* or a part of an invention shall be deemed to be the inventor, notwithstanding that any other person is for any of the other purposes of this Act treated as the true and first inventor; and no person shall be deemed to be the inventor of an invention or a part of any invention by reason only that it was imported by him into the United Kingdom.

[...]"

[*my emphasis*]

38. A number of things arise from this. First, the way this section is drafted makes clear that the actual deviser is a person, since s16(2) refers to “...*notwithstanding ... any other person...*”. Second, the distinction being drawn by the term is between the actual deviser and others who are in law the “true and first inventors” but did not actually devise the invention, such as importers. Third, the section takes pains to ensure that the only right the actual deviser (or inventor) has by this section is a right to be mentioned.
39. Finally on the 1949 Act, two grounds of revocation are relevant. One of the grounds of revocation was that a patent had been granted on the application of a person not entitled to apply for it (s32(1)(b)). This ground could be raised by any person (*Terrell* 11th Edn para 323). There was a separate overlapping ground of revocation (s32(1)(c)) that the patent had been obtained in contravention of the rights of the petitioner. This latter ground (“obtaining”) could only be advanced by the person whose rights had been contravened (*Terrell* 11th Edn para 324).
40. The current law is the 1977 Act. Although a very great deal of the Act was passed to comply with the European Patent Convention, the Community Patent Convention and the Patent Cooperation Treaty, notably s7 and s13 are not listed in s130(7) as provisions intended to have that effect. I agree with Arnold J (as he then was) in *Abbott v Medinol* [2010] EWHC 2865 (Pat) at [68] that even if provisions are not listed in s130(7), it is undesirable for provision in our domestic law which in fact do correspond to provisions in the EPC to be interpreted differently. However that does not mean that one need not look any further than those treaties to understand a provision in the 1977 Act which is not listed in s130(7).

41. Recall that, under the 1949 Act, the right to the grant of a patent was assignable before grant and so patents did not have to be granted to the true and first inventor. However the applicant was required by law to name the true and first inventor, patent applications had to contain an assent from the true and first inventor, the actual deviser of an invention had a right to be mentioned in the patent, and a ground of revocation, open to anyone, was that the patent had been granted to a person not entitled to apply.
42. In July 1970 (Cmd 4407) the Banks Committee ('the Committee') reported on the British Patent System. Part Five, Chapter 21, paragraphs 524-531, makes recommendations about the procedure relating to patent applications. The Committee noted at paragraph 526 that "*‘True and first inventor’ means not only the actual deviser of the invention, but also anyone who imports the invention into the United Kingdom.*" Leaving aside Convention applications (which are irrelevant) paragraph 527 noted the requirement in s2(2) of the 1949 Act for the filing of an assent from the inventor. Paragraph 528 noted that the Committee had received criticisms of this requirement in that it was difficult to comply with because in many cases employers of the inventors may not be able to identify precisely whose assent is required. The committee noted that "The failure, even a *bona fide* failure, to comply exactly with the formalities in such cases would appear to result in the patent becoming liable to revocation."
43. Paragraph 529 noted other suggestions including that the artificial meaning of true and first inventor should be abolished. The report also discussed patent applications made by "communication" which are not now relevant.
44. At paragraph 530 the Committee suggested that the law should be simplified in various ways. Declarations of assent and declarations of inventorship should be abolished. The approach should be adopted should be:

"that the right to make an application should be enjoyed by anyone claiming to be the inventor (that is the actual deviser of the invention and not the 'true and first inventor') or by anyone claiming to be entitled to the benefit of the patent when granted. This, we think, would simplify the procedure for applicants, protect patentees against invalidation of their patents through inadvertent error in naming inventors, give recognition to the fact that the Patent Office is in no position to check the completeness of declarations of assent and inventorship at present required (which therefore provide no real safeguard against wrongful obtaining of patents), and abolish the anomaly of "communicated" invention. We realise, however, that safeguards are necessary to protect the interests of inventors, and would stress that making of any application by a person other than the inventor should not imply in any way that the inventor has assented to the making of the application or acknowledged the right of the applicant to make it. Furthermore, since we believe that it is most important that the contribution of the inventor, where he is not the applicant, should not be overlooked, we recommend that the applicant, both in Convention and in non-Convention applications, should be required to name the person(s) believed to be the inventor(s), who would then be named in the published specification, but that the fulfilling of

this requirement should not prejudice the right of any other person to apply under section 16 of the [1949] Act to be mentioned in the patent, nor should a *bona fide* error in the naming of inventors invalidate a patent. Where disputes arise over ownership of applications or patents, a new procedure will be necessary for their resolution, and this we recommend in Chapter 13. [...]"

45. Then at paragraph 532 the formal recommendations are

“We recommend that:

For the purposes of the Patents Act, the concept of the inventor as the actual deviser of the invention should replace that of the “true and first inventor”.

Application for a patent may be made (a) by anyone claiming to be the inventor or by anyone claiming to be entitled to the benefit of the patent when granted, or (b) in the case of an application claiming priority under the International Convention by the person by whom the application abroad was made or by anyone claiming to be the assignee of that person.

The making of an application by a person other than the inventor should not imply in any way that the inventor has assented to the making of the application.

Applicants should name those believed to be the inventors and the inventors should be named in the published specifications.

The requirement for a declaration of assent Section 2(2) of the [1949] Patents Act, should be abolished, and s4(5) should be replaced or suitably amended.

[...]"

46. Also at paragraph 374 the Committee recommended that s32(1)(b), the provision allowing patent revocation for lack of entitlement at the suit of any person, be altered to conform to the recommendations in Chapter 21 set out above.

47. In summary, the relevant points emerging from this review of the history are as follows. Under what was to be the new law (which became the 1977 Act):

- i) The concept of the inventor was to be limited to the person who actually devised the invention.
- ii) Applications for patents could be made by anyone and the Comptroller, in granting a patent to the applicant, was not ratifying their claim to the right to be granted the patent.

- iii) Applicants would no longer be required by law to name the inventor. They would simply be required to state who they believed the inventor to be. That is because the true identity of the inventor was no longer to be relevant to any question the Comptroller would have to decide when deciding to grant a patent to the applicant. In future the only relevance of the identification of the inventor was so that that inventor, if identified, could be mentioned in the published patent.
- iv) Arguments about entitlement to the grant of patents were to be resolved by a separate procedure and only at the suit of a person disputing ownership of the patent.

48. I turn to the issues in this appeal.

(i) Does the 1977 Act require that an inventor to be a person?

49. A number of things about s7 are now clear. First it is no accident that s7(1) provides expressly that “any person” may make an application for a patent without qualification. Part of the recommendations of the Banks Committee was to abolish the idea that there was any qualification to be satisfied before someone could even make a patent application. Coupled with that there is now a clear presumption built into the law that the applicant shall be taken to be entitled to the grant (s7(4)). That presumption is rebuttable, but only “so far as the contrary is established”.
50. Second, a purpose of the definition of inventor in section 7(3) was to change the law, from the old law going back to the Statute of Monopolies, and to abolish the idea of a true and first inventor who could be anyone other than the actual deviser of the invention. The concept of the actual deviser of the invention was already known to United Kingdom patent law from the 1949 Act (s16). It was the person who actually devised the invention. The contrast was between that person and others who had not done so but were regarded as the true and first inventor, e.g. importers. So in *Yeda* paragraph [18] the contrast was drawn between the actual deviser and a pretended or deemed deviser.
51. The rest of the 1977 Act is drafted on the footing that the inventor is a person. For example s7(2)(c) of the 1977 Act refers to “*person or persons mentioned in paragraph (a) or (b)*” and s13 of the Act require an applicant to identify the “*person or persons whom he believes to be the inventor or inventors*”. However, for what it is worth, I would hold that the mechanism by which the inventor is a person in the scheme of the 1977 Act is because the “actual deviser” is a person and so, by definition in s7(3), is the inventor.
52. Thus the supposed concession on behalf of the Comptroller that DABUS is the actual deviser of the inventions is wrong and potentially confusing because it inherently contains a concession as to the law that the actual deviser need not be a person. Moreover if, which I do not accept, the 1977 Act could be understood as allowing for the actual deviser of the invention to be something other than a person then by definition in s7(3) inventors would not have to be persons. If that was how the definition in s7(3) worked then it would not be clear, to me at least, how it can be said those other provisions in the Act which refer to an inventor which is a person (such as s7(2)(a)), are to be understood as positively setting up a requirement that the inventor has to be a

person, rather than simply making provisions on the assumption that the inventor is a person and which would apply in such a case.

53. However within the terms of the 1977 Act DABUS is not the actual deviser because that is and can only be the *person* who actually devised the invention. In fact the Deputy Director's decision does not really concede that DABUS is the actual deviser. What is accepted at paragraph 21 is that DABUS created the invention.
54. I conclude that the answer to the first question is a simple one. Within the meaning of the 1977 Act the "inventor" is the person who actually devised the invention.
55. That conclusion is arrived at without any need to examine the policy arguments raised by both parties. Machines are not persons. The fact that machines can now create inventions, which is what Dr Thaler says happened in this case, would not mean that machines are inventors within the meaning of the Act. Assuming the machine is the entity which actually created these inventions, it has no right to be mentioned as the inventor and no right to employee's compensation under s39 (which no doubt it never had anyway).
56. I will also say that I am not persuaded that the argument about inventive step has anything to do with the issues in this case. Whether there has been an inventive step is a question answered by considering how a notional person skilled in the art would behave. The notional person skilled in the art has attributes which no real human being does or could have. The test involves the application of an objective legal standard and I do not agree with the judge's references to inventive step in this context at paragraph 45(3)(c). Real inventors do not have to make subjective inventive steps when they devise their inventions. Many inventors think that the inventions they have made were obvious to them. Whether they thought that or not is irrelevant because the legal standard is an objective one. Moreover if there is now a class of potentially patentable inventions which can be created without a human inventor then this does not mean that objective standard could not be applied to consider whether the invention satisfies the test.

(ii) What is s. 13 of the 1977 Act for, and how does it work?

57. The next question is about s13. The critical issue is about s13(2). It is apparent that the purpose of this provision was to fulfil the recommendations of the Banks Committee to simplify the application procedure.
58. Looking at the words themselves, all that is required in relation to inventorship is that the applicant must identify who he believes is the inventor. As a matter of language it would be surprising if this meant that an applicant who, in good faith, said they were unable to identify the inventor would find their application prejudiced. I can see that the Comptroller might ask for an explanation why the applicant was unable to name the person they believed to be the inventor but assuming a coherent explanation was given, I would hold that the language of the section was satisfied.
59. This interpretation of the words is fortified by the Banks Committee report which shows that the law was to be changed from that under the 1949 Act which imposed an obligation demanding the identification of the true and first inventor, including a

mandatory assent and so on. Notably the Banks Committee expressly contemplated cases in which the inventor might not be identifiable as being acceptable.

60. The judge gave an example of a statement filed under s13(2)(a) in which the applicant identified the inventor as the person's cat, holding that that would be deficient because a cat is not capable of being an inventor. That example is not helpful. If the statement of inventorship which was filed gave a silly reason why the applicant was not able to name a person who was the inventor then the Comptroller would be perfectly entitled to be suspicious. However if the Comptroller was satisfied that what the applicant had provided was their genuine belief, then it seems to me that s13(2)(a) has been satisfied. There is no reason to read the section as imposing any higher obligation on an applicant than to state their genuine belief about who the inventor was. The judge's approach would take applicants back to the position under the 1949 Act, which the 1977 Act was intended to change.
61. Turning to s13(2)(b), the judge also gave an example, contemplating what would happen if the applicant was to assert that the inventor had transferred to them right by some transmission unknown to the law. The judge held that the Comptroller would be justified in treating such a statement as deficient (paragraph 29(8)(b)).
62. To address this it is necessary to identify the purpose of the information provided under s13(2). This was explained by Whitford J in Nippon Piston Ring Co.'s Application [1987] RPC 120. Although Nippon Piston Ring was referred to in the documents and in a footnote in the court's judgment at paragraph [29], it was not in the authorities bundle and we were not taken to it.
63. Briefly, the applicant failed to file the statement of inventorship form within the time specified. In fact in an indirect way the applicant had identified the inventors and the Hearing Officer Mr Panchen held that s13(2)(a) was satisfied. However nothing at all had been said about how the applicants had any entitlement to apply. The argument had been that since the applicant company was obviously not the inventor, it must be deriving title under s7(2) (b) or (c) and that was a sufficient indication to satisfy s13(2)(b). The Hearing Officer at p124 ln10-20 noted the content of a Notice from the Official Journal at the time and added an observation about what was then Patent Office practice, saying:

"That notice, under the heading "Statement of Inventorship and Right to the Grant of a Patent (Form 7/77)", reads as follows:

"Under the provisions of section 13(2) and rule 15(1), an applicant who is not the inventor is required to indicate, at paragraph III(ii) of form 7/77, the derivation of his right to be granted the patent.

The information given on completed forms 7/77 submitted to the Patent Office is sometimes inadequate, either because it is too vague (e.g. "by operation of law" or "by due process of law") or because it refers to an incomplete claim of title (e.g. "by virtue of assignment from A to B", the applicant being C). In future, the Patent Office will raise objection to any

statement which does not adequately indicate the derivation of right."

I should add to this that, although not given as an example in the notice reproduced above, the Patent Office practice has been such as to regard statements of the form "by virtue of section 7(2)" as also being inadequate."

64. The Hearing Officer held that s13(2)(b) was not satisfied in the case before him because it was necessary at least to indicate which of the section 7(2) categories (b) or (c) the applicant falls under. Thus the applications were deemed withdrawn and so failed. Whitford J dismissed the appeal.
65. At p131 ln 4-13 Whitford J noted counsel's submission that there was no need to indicate which of s7(2)(b) or (c) an applicant falls under. In rejecting the submission the judge said the following:

"What has been said in the decision is that this at the least is what you have got to do, and I myself think that is right. Mr. Thorley did make a point that the whole of this provision in regard to derivation of title might seem to be somewhat absurd. One may well ask what is the need for this indication being given to the Patent Office, more particularly because it is accepted that you do not have to go into great detail when you give an indication of how you derive your title. "By assignment" is sufficient to satisfy the requirement in the eyes of the Office. The Office does not have to be shown any document which would evidence that your claim to title may have some justification. The Office does not have to be in any way satisfied that the claim you are making is good."

66. This passage is revealing. No great detail is required to satisfy s13(2)(b). No document evidencing title has to be produced to satisfy the requirement of the Act. Moreover and strikingly given what has happened to Dr Thaler in the present case, Whitford J, who was well aware of changes in law and practice brought about by the 1977 Act as compared to the 1949 Act, held that the Comptroller does not have to be "in any way satisfied" that the claim to title which the applicant is making is good.
67. So what then is the purpose of the twin requirements for identifying who is *believed* to be the inventor and providing an *indication* of how title is derived? Whitford J explains that too:

The only relevance of this, put forward by Mr. Pumfrey [*counsel for the comptroller*], is this: on the public record there will be made available the information as to who is said to be the inventor in respect of any particular invention, and if the application is not in the name of the inventor, some indication as to the way in which the applicants say they gained their title; information which, it is suggested, not wholly without justification, might conceivably be of some relevance to any

person who might be considering raising a question with regard to the right to a grant under, for example, section 8 of the Act.

[...]

Thereafter on no less than two occasions they [*the Office*] sought the relevant information from the applicants and never got it, so although one can feel considerable sympathy—and Mr. Pumfrey confirmed in this case, as counsel for the Comptroller have in others, that it is no pleasure to the Office to have to refuse patents in circumstances such as these—it would appear upon the face of it, no explanation having been produced at all as to why the requirement in this particular regard was not met, it was the fault of the applicants that they find themselves in the position which they do. In those circumstances I have come to the conclusion that the decision was correct and the appeal must accordingly fail.

68. Whitford J's explanation of the purpose of s13(2) fits with the legislative history seen from the Banks Committee report. The purpose of this section is simply to give the Comptroller information which will be made public. People believed to be inventors will be mentioned on the granted patent specification and the indication of how the applicant claims to derive his right to the grant will be there on the register. The purpose of the section is not to require or facilitate an examination of the applicant's claimed right to be granted the patent. The Comptroller is obliged at least to require that the applicant goes as far as stating which limb of s7(2) he relies on but that is all. The fact that an applicant gives further detail does not mean the Comptroller is obliged to examine the cogency of an assertion. The judge's error is in thinking that the Comptroller, in granting a patent to the applicant, is in any sense ratifying the applicant's claim to be entitled to the grant. The Comptroller is doing no such thing and the changes in the law from the 1949 Act to the 1977 Act were designed to stop that.
69. The example of an incomplete derivation of title given in the Hearing Officer's decision in *Nippon Piston Ring* at p124 ln 13-18 (in the passage quoted above) illustrates the sort of thing the Comptroller is required to do. The reference to an assignment from A to B does not show how C claims to have title. The point is not that the Comptroller must be satisfied that the applicant's claim to title is good. The problem is that taking the assertion made as correct, it still does not explain how C can claim to have the relevant right. (The second paragraph in the passage quoted from the Official Journal in which this example appears now appears in paragraph 13.09 of the official Manual of Patent Office Practice.)
70. Turning to the present case, the judge noted the ground of revocation in s72(1)(b) that a patent has been granted to a person not entitled to it and said in paragraph 29(6) of the judgment that "any patent granted" which did not meet the requirements of s7 could be revoked. That is wrong. The judge did not have his attention drawn to the fact that this ground of revocation is only available at the suit of a third party who has already been found by the court (or by the Comptroller) to be the person entitled to the grant (s72(2)(a)) and is also subject to a 2-year limitation period, unless the grantee knew he

was not entitled at the time of grant. These provisions are all part of the fulfilment of the Banks Committee's recommendations to simplify the law.

71. This illustrates another reason why the procedure under s13(2) simply does not involve the Comptroller examining the correctness of the applicant's claim to the right to the grant. Say the Comptroller later found that the patent had been granted to a person not entitled to it. The Comptroller would have no locus to revoke the patent in such a case.
72. The Act does give the Comptroller express power to determine the question of who has the right to be granted a patent. However that jurisdiction to decide those questions is only engaged on an application by a person himself claiming to be entitled to the patent or any right in or under it. This is section 8 (pre-grant) and section 37 (post-grant). For the Comptroller in this case to decide that Dr Thaler is not entitled to be granted the patent involves an exercise of the s8 jurisdiction in a case in which no such application by a person claiming the patents has been made.
73. Consistent with all this are two further matters. First the 1977 Act constitutes a relatively elaborate procedural scheme of preliminary examination, publication, search and substantive examination of a patent application. The possible outcomes are grant, refusal and withdrawal.
 - i) Taking grant first, a patent is granted (s18(4)) if the examiner reports to the Comptroller that the application complies with the requirements of the Act. That only happens after a "substantive examination" in which the examiner is required to investigate, to such extent as he considers necessary, whether the application complies with the Act (s18(2)). Compliance with the Act is defined in s1. None of that involves an examination of the applicant's right to be granted the patent. It is about patentability (novelty, inventive step etc.).
 - ii) Refusal occurs if, following examination, the examiner reports that the application does not comply with the Act. This can occur at the substantive examination stage (s18(3)) and also at the preliminary stage if designated formal requirements are not satisfied (s15A(7)). Lack of entitlement to grant is not a ground of refusal. S13(2) is expressly not a designated formal requirement.
 - iii) An applicant can always withdraw an application (s14(9)) but in various other circumstances withdrawal is deemed to occur. This happens because the applicant has failed to file things within the time required. For example s18(1) (no request for substantive examination) and s15(1) (failing to file an abstract or claims).
74. Section 13(2) is another example of deemed withdrawal. Within the statutory scheme, the fact the result of a failure to provide the information in s13(2) is a deemed withdrawal is not consistent with the idea that by this section what is in fact supposed to happen is a decision on the merits about the applicant's entitlement.
75. The second matter is about third parties' observations. Third parties can file observations about a patent application pre-grant (by s21). This is a way in which a third party can put to the Comptroller reasons why the application perhaps should not be granted which the Comptroller might not be aware of. However by s21 they are

limited to whether the invention is a patentable invention. Thus they do not include entitlement. If the Comptroller had a role in deciding the latter, that is an odd omission.

76. The judgment below proceeds on a fundamental misunderstanding of the scheme of s7 of the Act. The relevant place to start is s7(4) which provides for a presumption that the person making the application shall be taken to be the person entitled to the grant. The Banks Committee report again explains part of the purpose of this section. It is to get away from the idea that grant to a person not entitled inherently makes the patent invalid in some way and it is to relieve the Comptroller of any obligation to examine the quality of the applicant's claim to the right beyond providing an indication under s13(2). As I have said already, the grant of the patent is not a ratification of the applicant's claim. It is for other people to bring a claim to establish their right to be granted the patent and only then if they succeed in establishing that right (s72(2)) can a claim for revocation of the patent be brought. It is not inevitable that the person will want to revoke the patent. They may wish instead to have it for themselves.
77. Indeed, although we heard no argument on this point, I think it is strongly arguable that the correct interpretation of s7(4) is that the opening words of the section mean "except in so far as the contrary is established in proceedings constituted for that purpose in this Act", i.e. in proceedings under s8 or s37.
78. Turning to s7(2)(a) to (c), when the Act provides that the grant is primarily to the inventor that does not mean that the right to grant necessarily ever resides with the inventor. This is another error by the judge. It is wrong to see both s7(2)(b) and (c) as being characterised by a transfer of rights. Section 7(2)(c) clearly does involve some kind of transfer but s7(2)(b) does not. A person may have the right under s. 7(2)(b) as the right's first owner, in other words the right, as soon as it comes into existence on the making of the invention, belongs to that person. When an invention is made by an employee in the course of their normal duties in their employment is an example.

(iii) What is the right response to Dr Thaler's statement of inventorship under s13(2)?

79. Starting with s13(2)(a), the position here is that the applicant Dr Thaler has filed a statement, within the appropriate time, in which he has identified the person or persons whom he believes to be the inventor or inventors. His statement identifies no person as the inventor because he believes there is no human inventor. There is no suggestion his statement is not an honest statement of his belief. Nor, and crucially, is there any suggestion from the statement or the surrounding circumstances that in fact there is a person Dr Thaler believes is the inventor and Dr Thaler is deliberately hiding it. Just because all inventors are people, this case demonstrates that it does not follow that all inventions have a person who invented them.
80. In my judgment Dr Thaler has complied with his legal obligations under s13(2)(a). The fact that no inventor, properly so called, can be identified simply means that there is no name which the Comptroller has to mention on the patent as the inventor. The Comptroller in these circumstances is not obliged to name anyone (or anything). The absence of a named inventor when it is clear why no name has been given and it cannot be said the applicant is not giving their genuine belief, is no basis on which to find that s13(2) has not been complied with.

81. There is more than a hint in this case of the idea that if only Dr Thaler was not such an obsessive and, instead of calling DABUS the inventor, he named himself and then none of these problems would arise. However since inventors can waive their right to be mentioned under s24(3), even if the Comptroller suspects that Dr Thaler is really the inventor, Dr Thaler has clearly waived whatever right he may have had to be mentioned and that should be the end of that.
82. Turning to s13(2)(b), it is fair to say that Dr Thaler's case has varied somewhat over the course of these proceedings but it is now clear what it is that Dr Thaler advances to the Comptroller as the derivation of his right to be granted the patent. He contends that he derives his right under s7(2)(b) because he created, owns and operated DABUS and there is a rule of law whereby the owner and operator of a machine which creates inventions is entitled to the right to apply for and be granted a patent for an invention created by that machine.
83. In my judgment Dr Thaler has complied with his legal obligations under s13(2)(b) as well. He has given an indication of the derivation of his right to be granted the patent. The claim to derivation will be clear on the register. The assertion, if correct, is not incomplete. It would mean that Dr Thaler does indeed have the right to apply for and be granted the patent. When the application is published then if someone thinks he has the right to patents for these inventions he would see how it is that Dr Thaler's claim is put. If he thought he had a better right than Dr Thaler he would be able to come to the Comptroller in proceedings under s8 (or after grant under s37) and, if he can, establish that he should be granted the patent instead.
84. It is therefore unnecessary to examine whether there is indeed such a rule of law.
85. Looking at Dr Thaler's position as it stands, it is not obvious that there is any other person with a better right than Dr Thaler's to be granted patents for these inventions but if there is then they can come forward. I do not shy away from the fact that the result I propose, coupled with the fact that challenges to entitlement can only be brought by a person claiming the right to the patent, mean that Dr Thaler's claim to the right may well never be tested. However that consequence was deliberately built into the scheme of the 1977 Act for policy reasons.
86. A further reason why the Comptroller ought not to have any locus to evaluate the claim to derivation is that it risks resurrecting s32(1)(b) of the 1949 Act by the back door, or creating an opportunity for new kind of argument about fraud on the Patent Office. In answer to a question along these lines, counsel for the Comptroller submitted that if false statements under s13(2) were made in a case like the present (e.g. Dr Thaler falsely saying he was the inventor) there was not likely to be any revocation of the patents under s72(1)(b) because in such circumstances it was hard to imagine how anyone else would have locus to bring a claim for revocation and so the patent would stand. That answer shows two things. First it is inconsistent with the judge's reliance on the s72(1)(b) ground for revocation. Second it shows the oddity of the Comptroller choosing, in some cases but not others, to evaluate the quality of the claimed derivation of right. If Dr Thaler had said he was the inventor in this case it is plain that that would have been accepted at face value by the Comptroller and the patents would have gone to grant.

87. US patent law can involve arguments about fraud on the Patent Office. It would not be a welcome step to introduce them in this jurisdiction. The problem does not arise if, as I believe the Act provides, the Comptroller has no role in adjudicating on the effectiveness of the claimed derivation of right.

Other points

88. The above is sufficient to dispose of this appeal. The following paragraphs address a number of other points arising from the wide-ranging submissions which were made.

Respondent's notice

89. There is no need to address the respondent's notice because it would only be relevant if it was appropriate to examine on this occasion whether Dr Thaler is right in his claim to derive title to the grant. One of the dimensions of the argument about whether there was indeed a rule of law whereby Dr Thaler was entitled to the whole property in the invention was a question whether it was possible to have possession of intangible property. That does seem odd, but it is something I prefer to decide in a case in which it actually matters. I draw attention to s2(3) of the 1949 Act, quoted above, which indicates that at least in relation to inventions it was understood to be meaningful to say that an applicant was in possession of an invention when they made the application.
90. One might also consider what would happen if a burglar broke into Dr Thaler's office, read the description of the invention produced by DABUS, and filed a patent application for it. They would no doubt falsely name themselves as inventor and thereby apparently satisfy s13(2)(a) and (b) from the Comptroller's point of view. The patent would be granted and one of the important things about the scheme of the 1977 Act is that that grant of the patent, even to a person not in fact entitled, is not a nullity. The granted patent is a patent in full force and effect. Assume Dr Thaler saw the patent granted and approached the burglar. If the burglar settled with Dr Thaler, that might include an assignment of the patent to Dr Thaler. The result would mean that Dr Thaler would acquire good title to the patent.
91. If there was no settlement, then Dr Thaler would have a good claim for breach of confidence against the burglar. The making of the patent application by the burglar would I think have been a breach of confidence actionable by Dr Thaler. In such a case, even though it is now clear that the right to bring a claim in breach of confidence is not a property right, one might think it would be an odd result that a court would hold that the burglar had acted in breach of Dr Thaler's confidence but could not, on a claim under s37, also find that Dr Thaler had a better claim to the patent than the burglar. However, as I have explained, it is not necessary to resolve these issues. Nevertheless for what it is worth I do not see an unsurmountable barrier preventing the court from finding that there is a rule of law which would locate the right to apply for a patent with Dr Thaler in the present circumstances. The fact there is no such rule set out in the 1977 Act does not matter because the reference to a rule of law in s7(2)(b) does not mean a rule to be found in the Act itself. The fact that for some purposes it is appropriate to regard inventions as information (per Lord Hoffmann in *Merrell Dow v Norton* [1996] RPC 76 at 86) and that the law does not recognise property in information, is clearly important but is not a complete answer. For other purposes inventions are not merely information, see e.g. s60(1)(a) which applies when the invention is a product. Finally, the fact that no pre-existing rule has been identified is

no doubt because the relevant circumstances have not arisen for decision before. That does not prevent the court from deciding how the law should apply in a new situation.

Foreseeable technology

92. One of the submissions made was that the technology in this case was unforeseeable at the time of the 1977 Act. I do not believe it matters but if it does then I was not satisfied that the parties had examined that question sufficiently to make such a statement with any confidence. More work would have been required. What has changed since the 1970s is terminology. Edward Feigenbaum’s pioneering work on thinking machines, then called “expert systems”, was published well before the 1977 Act.

Drafting the European Patent Convention

93. We were also referred to extracts from the EPC *travaux préparatoires*. These were irrelevant not only because the relevant provisions in this case are not based on the EPC, but also because they were concerned with the patentability of computer software, which is a different question from the questions in this case. The documents included a statement by the UK delegation (para 96 on Art 52E, EPC 1973 p50) that “a computer programme was basically not inventive”. That statement was referring to whether a computer program was patentable. It was not making a statement about whether a machine like DABUS could ever be built.

Foreign decisions

94. We were referred to decisions of the EPO and the US PTO in relation to applications for patents for same inventions as in this case. In both cases the decisions have not gone in Dr Thaler’s favour but both are still under appeal. The law in the US is quite different, but even in the EPO the legislative framework is not the same as the relevant parts of the 1977 Act. There is no need to examine these decisions.
95. After the hearing the appellant sent the court a copy of the judgment of Beach J of 30th July 2021 in the Federal Court of Australia *Thaler v Commissioner of Patents* [2021] FCA 879. The judgment deals with another parallel case about applications for the same inventions. Beach J decided the case in Dr Thaler’s favour. However yet again the relevant legislation is quite distinct from that in the UK. The applications reached the Australian Patent Office via the Patent Cooperation Treaty (PCT), which meant that a local rule (reg 3.2C(2)(aa)) applied which requires the applicant to provide the name of the inventor. That rule is in different terms from s13(2) and the present case is not a PCT application. If it were then the operation of s13(2) would be affected by a deeming provision (s89B(1)(c)) which we do not have to consider.
96. We were also sent a copy of the South African Patent Journal which shows that an application, also via the PCT route, corresponding to one of Dr Thaler’s applications before us has been granted in that country.

Conclusion

97. In summary:
- i) The inventor of an invention under the 1977 Act is the person who actually devised the invention.

- ii) Dr Thaler has complied with his obligations under s13(2) of the 1977 Act because he has given a statement identifying the person(s) he believes the inventor to be (s13(2)(a)) and indicating the derivation of his right to be granted the patent (s13(2)(b)).
- iii) It is no part of the Comptroller's functions under the 1977 Act to deem the applications as withdrawn simply because the applicant's statement under s13(2)(a) does not identify any person who is the inventor. Since the statement honestly reflects the applicant's belief, it satisfies s13(2)(a).
- iv) It is no part of the Comptroller's functions under the 1977 Act to in any way be satisfied that the applicant's claim to the right to be granted the patent is good. In granting a patent to an applicant the Comptroller is not ratifying the applicant's claim to derivation. Dr Thaler's asserted claim, if correct, would mean he was entitled to the grant. Therefore the statement satisfies s13(2)(b).
- v) The fact that the creator of the inventions in this case was a machine is no impediment to patents being granted to this applicant.

98. I would allow the appeal and declare that (i) the applicant has satisfied the requirements of s13(2) of the Act and (ii) the applications are not deemed withdrawn.

Lady Justice Elisabeth Laing:

99. For conventional reasons, this judgment is printed between the judgments of Birss LJ and Arnold LJ. I suggest that it is read after both of those judgments. Those judgments consider the issues in much more detail, and much more knowledgeably. I am grateful both to Birss LJ and to Arnold LJ for their researches into the history of the 1977 Act and into property law. I adopt, with thanks, their exposition of the legislation, of the legislative history and of the case law. I echo the surprise and disappointment expressed by Arnold LJ in paragraph 139 of his judgment that the Court was given so little help on the legislative history, and that although the decision of Whitford J in the *Nippon Piston Ring* case was referred to in a footnote in the judgment under appeal, neither side mentioned it in their written or oral argument. In the light of the impressive detail in which Birss LJ and Arnold LJ have considered the issues, I can express my views quite briefly.
100. Birss LJ and Arnold LJ describe the three issues in this case somewhat differently (compare paragraphs 27 and 115 of their judgments). I do not consider that much turns on those differences. The key to this appeal, as Arnold LJ observes, in paragraph 136, is that modern patent law is almost entirely a creature of statute. The 1977 Act, therefore, provides the answers to the questions on this appeal.
101. The requirements of section 13(2) are cumulative, so that if Dr Thaler's Forms 7 did not satisfy section 13(2)(a), whether they could have satisfied section 13(2)(b) is an academic question. In my judgment, the central questions therefore are whether
- i) as a matter of law, a person may apply for a patent when he expressly declares that the inventor of the invention in question is not a person, and

- ii) in any event, an applicant complies with the requirements of section 13 if he files a statement under section 13 of the 1977 Act in which he does not claim that the invention was made by a person, but positively asserts, instead, that the invention was made by a machine.
102. Both Birss LJ and Arnold LJ agree that the clear effect of the relevant provisions of the 1977 Act is that an inventor must be a person. I also agree with that conclusion. Rights are a consistent theme which runs through section 7. Only a person can have rights. A machine cannot. The premise of section 7 is that an inventor is and can only be a person. A patent can be granted ‘primarily to the inventor’, and only to someone else in the circumstances described in section 7(2)(c) and (d). A patent is a statutory right and it can only be granted to a person. That means that the effect of section 7(2)(a) is that the inventor must be a person. Only a person can make, before the invention is made, an enforceable agreement by which he is entitled to the whole of the property in the invention (other than equitable interests) (section 7(2)(b)). Such an agreement can only be made with another person. Only a person can have a successor in title (section 7(2)(c)). It follows that, absent a statutory deeming provision, it is simply not possible, as a matter of law, for Dabus to be an ‘inventor’ for the purposes of section 7. Nor, for the reasons given by Arnold LJ, has Dr Thaler identified any enactment of rule of law by which he is entitled to that property (even if he could, that would not help his case, because it would not overcome the hurdle that Dabus is not an inventor for the purposes of the Act). Only a person has a right to be named as an inventor (section 13(1)). Section 13(2)(a) also assumes that the inventor is a person. Arnold LJ gives many other examples of provisions in the 1977 Act which support that construction.
103. The 1977 Act is a ‘complete code’ (per Lord Hoffmann in paragraph 20 of *Yeda*). Section 7 is the only provision of the 1977 Act which confers a right to apply for a patent. On its proper construction, it does not permit the grant of a patent in a case in which the inventor is not a person. There is no room for any implication to the contrary. In other words, if the inventor is known not to be a person, section 7 does not and cannot apply to the case at all. If the inventor is not a person, but a machine, no person has, as a matter of law, a right to apply for a patent in respect of the machine’s inventions. It is as simple as that. Whether or not thinking machines were capable of devising inventions in 1977, it is clear to me that Parliament did not have them in mind when enacting this scheme. If patents are to be granted in respect of inventions by machines, the 1977 Act will have to be amended.
104. Does section 13 make any difference? Section 13(2) requires an applicant to file a statement with the Patent Office ‘identifying the person or persons whom he believes to be the inventor or inventors’, and, if he is not the inventor, ‘indicating the derivation of his ...right to be granted the patent’. If he fails to file such a statement within the prescribed period, his application is to be taken to be withdrawn. Section 13 imposes what may look like purely formal requirements, but a failure to comply with those formal requirements leads to a substantive consequence. Parliament can therefore be taken to have considered that compliance with those formal requirements was important. That conclusion is supported by the decision in the *Nippon Piston Ring* case, but it is also a conclusion which is clear on the face of section 13(2). It would be surprising if this provision, which imposes requirements on an applicant, could also require the grant of a patent to an applicant who has, and has explicitly declared in his

Forms 7 that he has, no statutory right to the grant of a patent. For the reasons given below, I consider that, as a matter of construction, it does not have that effect.

105. Paragraph 140 of the judgment of Arnold LJ shows that he and Birss LJ agree about some of the implications of section 13. In particular, it is clear from the word ‘believes’ that section 13(2) is designed to ensure that bona fide mistakes in identifying the inventor, or about the derivation of the applicant’s right to apply for a patent, will not prevent the grant of a patent, or lead to its revocation. It does not follow, however, that if an applicant, instead of identifying a person (or saying that he does not know who the inventor is), positively asserts that the inventor is not a person, the applicant has complied with the requirements of section 13(2)(a). There is a significant difference between a failure to identify the person who is the inventor, and the statement made by Dr Thaler. In my judgment, such a statement self-evidently does not comply with section 13(2)(a), for two linked reasons. First, it is a statement which fails to identify any relevant ‘person’ who, the applicant believes, is the inventor, and instead, positively asserts that there is no such person. Second, it shows that, as a matter of law, the applicant is not entitled, under section 7, to apply for a patent, both because the inventor is positively asserted not to be a person and because, it follows, the inventor can have no property in the invention which could belong to the applicant, or which could have become his property in accordance with section 7(2)(c).
106. In deference to Birss LJ’s comprehensive judgment, and to his great experience in this field, I should explain why I do not, with respect, agree with some of his specific conclusions.
107. I consider, first, the effect of section 7(4) in this case. For the reasons given above, the presumption in section 7(4) is rebutted in this case by the section 13 statement filed by Dr Thaler. But even if it was not, section 13 operates independently of the presumption. An applicant is required to file a statement complying with section 13, and if he does not, his application is to be treated as withdrawn. If the presumption in section 7(4) was intended to have any effect on the operation of section 13, Parliament would have made express provision to that effect.
108. It will be clear from what I have already said that I do not agree that section 13(2)(a) only requires an applicant to ‘state their genuine belief about who the inventor was’ (judgment, paragraph 60). Rather, it expressly requires the applicant to identify the person who, he believes, is the inventor. That is a different requirement, and it is not met by a statement that the applicant genuinely believes that the invention was devised by a machine (or, for that matter, by a cat). That is enough to dispose of the appeal, but, if it is necessary for me to express a view on the requirements of section 13(2)(b), I agree with the reasoning of Arnold LJ on this point (paragraphs 122-135 and 142). I say a little more about section 13(2)(b) in paragraph 111, below.
109. I agree with Birss LJ that section 13 is not a mechanism which requires the Comptroller to investigate the factual or legal merits of an application, or, it follows, to endorse the validity of the application (for example, judgment, paragraphs 68, 71 and 74). It does not follow, however, that the sole purpose of section 13(2) is ‘simply to give the Comptroller information which will be made public’. The decision in the *Nippon Piston Ring* case shows that the Comptroller has to decide whether or not the statement complies with section 13(2). I agree with Birss LJ that section 13(2) does not require great detail. But the statement must satisfy the Comptroller that the inventor is a person

(even if the applicant cannot identify that person) and indicate, in general terms, how the applicant claims that he is entitled to apply for the patent. The Comptroller is not obliged to accept a section 13 statement which is bad on its face, as this statement was, for the reasons I have given above. That is not a decision on the merits of the application, but, rather, a decision that the requirements of section 13(2) have not been met.

110. I do not agree with Birss LJ's conclusion (judgment, paragraph 79), that Dr Thaler filed a statement 'in which he has identified the person or persons whom he believes to be the inventors'. I consider that that conclusion is contradicted by the next sentence of paragraph 79: 'His statement identifies no person as the inventor because he believes there is no human inventor'. It may be that the facts of this case show that a machine can devise an invention, but the fact that not every invention is devised by a person does not cure a failure to comply with section 13(2)(a). Dr Thaler has not complied with section 13(2)(a) because (a) he has not identified the person he believes is the inventor, and (b) he has positively asserted, instead, the inventor is not a person, and thus drawn attention to the fact that the application does not and cannot fall within section 7 (for the reasons I have given above).
111. Birss LJ accepts (paragraph 82) that Dr Thaler's case has 'varied somewhat over the course of the proceedings but it is now clear what it is that Dr Thaler advances to the Comptroller as the derivation of his right to be granted the patent...'. This is a second appeal. The question is not what case Dr Thaler now advances on this point, but what he said in his Forms 7. Those said that Dr Thaler acquired the right to the patents in question by 'ownership of the creativity machine Dabus' (decision of the Hearing Officer, paragraph 3). I agree with Arnold LJ that that statement did not indicate a derivation of the relevant right which is known to the law.
112. For these reasons, in agreement with Arnold LJ, I would dismiss this appeal.

Lord Justice Arnold:

Introduction

113. Dr Thaler asserts that the inventions described and claimed in patent applications GB18116909.4 and GB1818161.0 filed by Dr Thaler were entirely made by DABUS (Device for the Autonomous Bootstrapping of Unified Sentience), an artificial neural system owned by Dr Thaler. The correctness of that factual assertion has not been investigated in these proceedings, but it has not been disputed by the Comptroller. Indeed, the hearing officer went so far as expressly to accept that DABUS created the inventions. Nor is Dr Thaler's claim to ownership of DABUS disputed.
114. The applications are part of a project involving parallel applications to patent offices around the world in which Dr Thaler and his collaborators, including Robert Jehan of Williams Powell and Professor Ryan Abbott of the University of Surrey (author of *The Reasonable Robot: Artificial Intelligence and the Law*, Cambridge University Press, 2020), who represent him in these proceedings, seek to establish that artificial intelligence systems can make inventions and that the owners of such systems can obtain patents in respect of those inventions: see www.artificialinventor.com. It is therefore a test case. Although similar test cases are pending in other jurisdictions, we must apply the law of the United Kingdom. Furthermore, at the risk of stating the

obvious, we must apply the law as it presently stands: this is not an occasion for debating what the law ought to be.

115. Three issues arise on this appeal. First, does DABUS qualify as an “inventor” within the meaning of the Patents Act 1977 given that it is accepted by Dr Thaler that DABUS is not a person (whether natural or legal)? Secondly, is Dr Thaler entitled to apply for patents in respect of the inventions given that they were made by DABUS? Thirdly, was the hearing officer correct to hold that, given the statements made by Dr Thaler regarding inventorship and his derivation of title in the Form 7s he filed in respect of the applications, the applications are deemed to have been withdrawn by virtue of section 13(2) of the 1977 Act?

Does DABUS qualify as an “inventor” within the meaning of the Patents Act 1977?

116. In my judgment it is clear that, upon a systematic interpretation of the 1977 Act, only a person can be an “inventor”. The starting point is section 130(1) which provides that “‘*inventor*’ has the meaning assigned to it by section 7 above”. Section 7(3) provides that “‘*inventor*’ in relation to an invention means the actual deviser of the invention”. A dictionary definition of “deviser” is “a person who devises; a contriver, a planner, an inventor” (*Shorter Oxford English Dictionary*, 5th edition, Oxford University Press, 2002). Section 7(2) provides that a patent may be granted (a) “primarily to the inventor or joint inventors”, (b) “to any person or persons who ...”, (c) “the successor or successors in title of any person or persons mentioned in paragraph (a) or (b) above”, but “to no other person”. As Lord Hoffmann explained in *Yeda Research and Development Company Ltd v. Rhone-Poulenc Rorer International Holdings* [2007] UKHL 43, [2007] Bus LR 1796 at [20], this is “an exhaustive code”. It is clear from this code that category (a) must consist of a person or persons, just as much as categories (b) and (c) do. Section 7(4) creates a presumption that “a person who makes an application for a patent shall be taken to be the person who is entitled under subsection (2) above to be granted a patent”. Again, it is plain that only a person can be entitled under section 7(2), and thus only a person can fall within paragraph (a).
117. Further support for this interpretation is afforded by section 2(4), which provides that prior disclosures of an invention are not novelty-destroying in certain circumstances:

“For the purposes of this section the disclosure of matter constituting an invention shall be disregarded in the case of a patent or an application for a patent if occurring later than the beginning of the period of six months immediately preceding the date of filing the application for the patent and either—

- (a) the disclosure was due to, or made in consequence of, the matter having been obtained unlawfully or in breach of confidence by any person—
 - (i) from the inventor or from any other person to whom the matter was made available in confidence by the inventor or who obtained it from the inventor because he or the inventor believed that he was entitled to obtain it; or
 - (ii) from any other person to whom the matter was made available in confidence by any person mentioned in sub-paragraph (i)

above or in this sub-paragraph or who obtained it from any person so mentioned because he or the person from whom he obtained it believed that he was entitled to obtain it;

- (b) the disclosure was made in breach of confidence by any person who obtained the matter in confidence from the inventor or from any other person to whom it was made available, or who obtained it, from the inventor; or

...”

Again, it is plain from the references to “the inventor or ... any other person” that the inventor must be a person.

118. The provision in section 3 that an invention “shall be taken to involve an inventive step if it is not obvious to a person skilled in the art” is consistent with this interpretation of the meaning of the word “inventor”, but I agree with Birss LJ that it does not provide any independent support for it.

119. Further support for this interpretation is contained in section 8, which provides so far as relevant that:

“(1) At any time before a patent has been granted for an invention (whether or not an application has been made for it)—

- (a) any person may refer to the comptroller the question whether he is entitled to be granted (alone or with any other persons) a patent for that invention ...

...

- (6) Where on a reference under this section it is alleged that, by virtue of any transaction, instrument or event relating to an invention or an application for a patent, any person other than the inventor or the applicant for the patent has become entitled to be granted (whether alone or with any other persons) a patent for the invention ...”

Again, it is clear from these provisions that only persons can be entitled to be granted a patent, and it follows that all three categories of the potentially entitled must be persons. (Section 12(1) is in very similar terms to section 8(1) with respect to applications for foreign and convention patents.)

120. Yet further support for this interpretation is provided by the following parts of section 13:

“(1) The inventor or joint inventors of an invention shall have a right to be mentioned as such in any patent granted for the invention and shall also have a right to be so mentioned if possible in any published application for a patent for the invention

(2) Unless he has already given the Patent Office the information hereinafter mentioned, an applicant for a patent shall ... file with the Patent Office a statement—

(a) identifying the person or persons whom he believes to be the inventor or inventors; and

...”

121. Subsection (1), which gives effect to Article 4^{ter} of the Paris Convention for the Protection of Intellectual Property 1883 (Stockholm Act 1967), confers a “right” upon “the inventor or joint inventors”. The right is a species of moral right (more specifically, it is, in the jargon of moral rights, a “paternity” right, that is to say, a right to be identified as the creator of something). Only persons can have rights, and in particular moral rights, and it follows that inventors must be persons.
122. Subsection (2)(a) requires the applicant to identify “the person or persons whom he believes to be the inventor or inventors”. It is implicit in this that only persons can be inventors.
123. I therefore conclude that the hearing officer and the judge were correct to hold that DABUS does not qualify as an “inventor” within the meaning of the 1977 Act because it is not a person.

Is Dr Thaler entitled to apply for patents in respect of the inventions?

124. As noted above, it is Dr Thaler’s position that he is not an inventor of either of the inventions, and thus he accepts that he cannot claim entitlement to apply for a patent in respect of those inventions by virtue of section 7(2)(a). Equally Dr Thaler accepts that he is not a successor in title to DABUS so as to be entitled to apply under section 7(2)(c), because DABUS has no legal personality or capacity and thus cannot enter into any transaction with Dr Thaler transferring title to him. (Although Dr Thaler claimed to be the “assignee” of DABUS in the addendum to the Form 7s he filed on 23 July 2019, he no longer maintains that claim.) Dr Thaler contends, however, that he was at the time of the making of the inventions entitled to “the whole of the property” in them by virtue of a rule of law, and thus was entitled to apply under section 7(2)(b).
125. The starting point here is that “an invention is a piece of information”: *Merrell Dow Pharmaceuticals Inc v HH Norton & Co Ltd* [1996] RPC 76 at 86 (Lord Hoffmann). There is no property in information even if it is confidential: see *Jefferys v Boosey* (1854) 4 HLC 814 at 966 (Lord Brougham); *E.I. Du Pont de Nemours Powder Co v Masland* (1917) 244 US 100 at 102 (Holmes J, US Supreme Court); *Federal Commissioner of Taxation v United Aircraft Corp* (1943-44) 68 CLR 525 at 534 (Latham CJ, High Court of Australia); *Nicrotherm Electrical Co Ltd v Percy* [1957] RPC 207 at 209 (Lord Evershed MR, with whom Hodson and Romer LJJ agreed); *Boardman v Phipps* [1967] 2 AC 46 at 89G-90A (Viscount Dilhorne), 102G (Lord Cohen) and 127F-128A (Lord Upjohn); *Fraser v Evans* [1969] 1 QB 349 at 361 (Lord Denning MR); *Oxford v Moss* (1979) 68 Cr App Rep 183 at 186 (Smith J, with whom Wien J and Lord Widgery CJ agreed); *Moorgate Tobacco Co Ltd v Philip Morris Ltd* [1985] RPC 219 at 234 (Deane J, with whom the other members of the High Court of Australia agreed); *Cadbury Schweppes Inc v FBI Foods Ltd* [2000] FSR 691 at [39]-

[48] (Binnie J delivering the judgment of the Supreme Court of Canada); *Douglas v Hello! Ltd (No 3)* [2005] EWCA Civ 595, [2006] QB 125 at [126]-[127] (Lord Phillips of Worth Matravers MR delivering the judgment of the Court of Appeal) and [2007] UKHL 21, [2008] 1 AC 1 at [276] (Lord Walker of Gestingthorpe); *Coogan v News Group Newspapers Ltd* [2012] EWCA Civ 48 at [39] (Lord Neuberger of Abbotsbury MR, with whom Lord Judge CJ and Maurice Kay LJ agreed); *Your Response Ltd v Datateam Business Media Ltd* [2014] EWCA Civ 281, [2015] QB 41 at [42] (Floyd LJ); and *Celgard LLC v Shenzhen Senior Technology Material Co* [2020] EWCA Civ 1293, [2021] FSR 1 at [56] (myself, with whom Davis and Popplewell LJ agreed). There are good reasons of principle and policy for this rule: it would have alarming consequences if there was property in information.

126. It is often possible to control the use of information by means of other rights, notably contractual rights and rights to enforce equitable obligations of confidence, but such rights should not be confused with property rights. The distinction is well illustrated by the seminal decision in *Franklin v Giddins* [1978] Qd R 72. The claimant bred the Franklin Early White nectarine, which was commercially very successful. The defendant trespassed into the claimant's orchard, stole four twigs of budwood from the claimant's trees and grafted them onto root stock from which he grew his own trees. The claimant succeeded in a claim, on the ground of breach of confidence, for delivery up of all the wood derived from the grafts. The basis for the decision was that the genetic information contained in the budwood was confidential information which was subject to an equitable obligation of confidence because the defendant had unconscionably taken the claimant's trade secret. It was not that there was any proprietary claim.
127. Although section 30(1) of the 1977 Act provides that "[a]ny patent or application for a patent is personal property", it makes no such provision with respect to an invention prior to the filing of a patent application in respect of it.
128. What, then, does section 7(2)(b) mean when it speaks of "the whole of the property in [the invention]"? I understand the parties to agree that, as suggested by the heading to section 7, the "property" referred to is the right to apply for (and, if the invention is found to be patentable and the other statutory requirements are complied with, to obtain) a patent in respect of that invention i.e. the entitlement to file an application. Although that right can be transferred, as section 7(2)(c) makes clear, it is only a right as against persons who derive knowledge of the invention from the inventor. Thus the inventor, and those who derive entitlement from the inventor, can use the machinery provided by sections 8, 12 and 37 to obtain either a transfer of an application and any resulting patents or an order permitting the filing of a replacement application if someone who has no entitlement to the invention wrongfully files an application in respect of it. If, however, another inventor independently devises the same invention and both inventors file applications, then neither inventor is entitled to the other's application; but the first to file will be entitled (if the invention is patentable) to a patent, whereas the second to file will not. Moreover, if someone who derives knowledge of the invention from the inventor publishes the invention (thereby destroying its novelty), or exploits the invention without publishing it, before any application is filed, the inventor will not have any remedy under the 1977 Act, but only such remedy as the inventor may have under other laws such as contract or equitable confidentiality. I therefore think the "property" referred to in section 7(2)(b) was well described by Lord

Walker of Gestingthorpe in *Yeda* at [53] as “a sort of inchoate property in the invention”.

129. The prime example of a rule of law, or more specifically an enactment, which vests “the whole of the property in” an invention in someone other than the inventor is section 39(1) of the 1977 Act, which provides that “an invention made by an employee shall, as between him and his employer, be taken to belong to his employer for the purposes of this Act and all other purposes” in either of the circumstances specified. The effect of this is that, where section 39(1) applies, the employer is the first owner of the right to apply for and obtain a patent in respect of that invention, and thus is entitled pursuant to section 7(2)(b). As this example makes clear, what section 7(2)(b) does is to give effect to a legal right, where it exists, of someone other than the inventor to stand in the place of the inventor with respect to the right to apply for and obtain a patent, although the inventor would otherwise be entitled to apply.
130. The rule of law relied upon by Dr Thaler is the common law doctrine of accession (which is actually one of a number of related doctrines referred to as “accession”) described in *Blackstone’s Commentaries on the Laws of England* (Clarendon Press, 1766), Book II, Chapter 26, paragraph 6, pages 404-405 (footnotes omitted):
- “The doctrine of property arising from *accession* is also grounded on the right of occupancy. By the Roman law, if any given corporeal substance received afterwards an accession by natural or by artificial means, as the growth of vegetables, the pregnancy of animals, the embroidering of cloth, or the conversion of wood or metal into vessels and utensils, the original owner of the thing was intitled by right of possession to the property of it under such it’s statement of improvement; but of the thing itself, by such operation, was changed into a different species, as by making wine, oil, or bread, out of another’s grapes, olives, or wheat, it belonged to the new operator; who was only to make a satisfaction to the former proprietor for the materials, which he had converted. And these doctrines are implicitly copied and adopted by our Bracton, in the reign of king Henry III; and have since been confirmed by many resolutions of the courts.”
131. As can be seen, the instances of the application of this doctrine given by Blackstone all concern new tangible property which is produced by existing tangible property. It is, as Blackstone says, a doctrine derived from Roman law which states that the owner of the pre-existing tangible owns the new tangible. It is rooted, as is most of the law of both personal and real property as theorised by Blackstone, in the concept of “dominion”, or exclusive possession. The newly produced tangible is susceptible of exclusive possession, and the person who has exclusive possession of the tangible which produced it will generally be able to exercise exclusive possession over the new tangible.
132. Although Blackstone was well aware of the existence of intangible property, including choses in action (personal property) and incorporeal hereditaments (real property), he did not suggest that the rule of accession applied to intangible property produced by tangible property, probably because such a possibility did not occur to him. Indeed,

after the passage cited above, he pointed out in paragraph 8 at pages 405-407 that, although in Roman law the doctrine of accession applied to something written (i.e. the ink) by a person on another person's paper or parchment, Roman law had no concept of copyright in a literary work, whereas this was recognised by English law as being the property of the author. He also referred to patents "by virtue whereof a temporary property becomes vested in the patentee".

133. In any event, the reasoning outlined in paragraph 131 above does not translate to the situation where an intangible – or at least an intangible of the kinds which are the subject-matter of intellectual property law – is produced by tangible property, because such intangibles are non-rivalrous goods (meaning that consumption by one does not preclude simultaneous consumption by others). Thus the new intangible is not susceptible of exclusive possession, nor does exclusive possession of the intangible follow from exclusive possession of the tangible property that produced it. (This might be regarded as an instance of the more general proposition that intellectual property fits much more readily within Hohfeld's conception of property than it does within Blackstone's.)
134. Professor Abbott, who argued this part of Dr Thaler's appeal, admitted that he was unable to cite any authority in which the doctrine of accession had been applied to a new intangible produced by existing tangible property. Birss LJ suggested during the course of argument that a possible precedent was the case of *St Columba*, sometimes said to be the first copyright case. *St Columba* is supposed to have copied Abbott Fenian's Psalter. The Abbott complained to King Diarmed, who gave judgment for the Abbott, saying "to every cow her calf, and accordingly to every book its copy". The difficulty with this suggestion is that the reasoning is not based upon the application of the doctrine of accession, because even now a physical book does not produce either the literary work which it embodies or copyright in that literary work, but upon an analogy. Moreover, the analogy is at best an imperfect one, because, as Blackstone recognised, the reason why Abbott Fenian would have had copyright in his Psalter was because he was the author of the literary work, whether or not he owned the parchment upon which it was inscribed.
135. Furthermore, Professor Abbott accepted that it was possible to think of instances where the doctrine of accession clearly did not apply to a new intangible produced by existing tangible property. One such example was given by counsel for the Comptroller: if A takes a digital photograph using B's camera, then A may own copyright in the photograph under the Copyright, Designs and Patents Act 1988 (provided that the photograph is original in the sense that it is A's intellectual creation and that A satisfies the qualification requirements), but not B. (Under the Copyright Act 1956 the copyright was owned by the owner of the film, if different from the owner of the camera.) Still less does B own the data stored in the cloud. Another example discussed in argument was that of a radio transmitter: if the owner of the transmitter broadcasts a radio programme, he may have copyright in that broadcast, but not property in the electromagnetic radiation which carries the signal. These two examples may be combined into a third: the contemporary mobile phone, which transmits reams of data daily. The owner of the mobile phone does not own either the transmissions or the data, although they may own copyrights in transmitted works if the statutory requirements are satisfied.
136. Professor Abbott argued that, even if there was no general rule that information produced by a machine was the property of the owner of the machine, nevertheless the

owner of the machine owned an invention created by the machine. This is really an argument about what the law should be, rather than about the present state of the law. As matters stand, it seems to me that the argument faces two obstacles. The first is that it pre-supposes that a machine can be an inventor for the purposes of the 1977 Act. The second is that I cannot see any basis in current law for a person to have a legal right to stand in the place of a machine with respect to the right to apply for a patent, because that pre-supposes that the machine would otherwise have that right, but as noted above machines do not have rights. A point which underlies both these obstacles is that modern patent law is almost entirely a creature of statute.

137. In my judgment there is no rule of law that a new intangible produced by existing tangible property is the property of the owner of the tangible property, as Dr Thaler contends, and certainly no rule that the property contemplated by section 7(2)(b) in an invention created by a machine is owned by the owner of the machine. Accordingly, the hearing officer and the judge were correct to hold that Dr Thaler is not entitled to apply for patents in respect of the inventions given the premise that DABUS made the inventions.

Was the hearing officer correct to hold that the applications are deemed to have been withdrawn by virtue of section 13(2) of the 1977 Act?

138. For the reasons given above, it is necessary to approach the application of section 13(2) of the 1977 Act to this case on the footing that: (i) although Dr Thaler named DABUS in his Form 7s as the inventor of the inventions, DABUS is legally incapable of being an inventor under the 1977 Act; and (ii) although Dr Thaler contends that he is entitled to apply for patents in respect of the inventions as the owner of DABUS by virtue of a rule of law, there is no such rule.
139. In interpreting current intellectual property legislation, it is frequently of assistance to consider the history of the legislation. (For a recent example, see *IPCom GmbH & Co KG v Vodafone Group plc* [2021] EWCA Civ 205, [2021] Bus LR 813 concerning the interpretation of section 55(1) of the 1977 Act.) It is therefore surprising, and disappointing, that we received no submissions concerning the history of section 13(2). It is even more surprising, and disappointing, that *Nippon Piston Ring Co. Ltd's Application* [1987] RPC 120 was not cited in argument even though it was mentioned in a footnote in the judgment under appeal and even though its relevance to this issue is plain. (To put this omission into perspective, however, it should be acknowledged that *Nippon Piston* is not cited in the current (19th) edition of *Terrell on the Law of Patents*.)
140. I am therefore indebted to Birss LJ for his researches, the results of which are set out in paragraphs 32-47 and 62-69 of his judgment. I agree with him that section 13 changed the law in certain respects. In particular, it is clear from the history, the wording of section 13(2), and section 72, that section 13(2) is intended to ensure that *bona fide* errors in identifying the inventor(s) or the derivation of the applicant's title should not prevent the applicant from obtaining a patent or render the patent liable to revocation, as is section 7(4). Furthermore, it is also clear that the purpose of section 13(2) is not to enable the Comptroller to investigate, let alone ratify, the factual correctness of the answers given by the applicant in its application forms. I also agree with Birss LJ that the decision in *Nippon Piston* provides assistance as to the proper interpretation of

section 13(2). I regret to say, however, that I disagree with the conclusion that he draws with respect to the present case.

141. *Nippon Piston* confirms that it is not the Comptroller's function to examine statements of inventorship and entitlement filed by the applicant pursuant to section 13(2) and rule 10(4) of the Patents Rules 2007 to determine whether or not they are well-founded. Provided that the applicant complies with the requirements of "identifying the person or persons whom he believes to be the inventor or inventors" and, where applicable, "indicating the derivation of his right ... to be granted the patent", then the application must proceed. As noted above, if the applicant is not in fact entitled to apply for a patent in respect of the invention, then the rightful applicant's remedy is to bring a reference under sections 8, 12 and/or 37 (which may be followed, if appropriate and desired, by an application for revocation under section 72(1)(b)). Moreover, if the applicant is the rightful applicant, but inadvertently names the wrong inventor, the only remedy available to the right inventor is that provided by section 13(3).
142. *Nippon Piston* also confirms, however, that the requirement imposed by section 13(2)(b) cannot be ignored and that, if it is not complied with, then the application must be deemed withdrawn. In that case the forms filed by the applicant did not indicate how it derived its right to be granted the patents, and in particular did not indicate whether it relied upon section 7(2)(b) or (c). This was held to be fatal, and the applications were deemed to have been withdrawn. It was also said in an Official Notice quoted by the hearing officer which was not criticised by Whitford J that it would be insufficient to rely upon an assignment from A to B when the applicant was C, and that the result would therefore be the same (and this continues to be stated in paragraph 13.09 of the Patent Office Manual). The same approach must apply to the requirement imposed by section 13(2)(a). Thus the Comptroller's function under section 13(2) is to check whether the prescribed statements have been filed in time, and if so whether the statements filed appear to comply with the statutory requirements or are defective on their face.
143. In the present case Dr Thaler did not identify "the person or persons whom he believes to be the inventor or inventors" as required by section 13(2)(a). On the contrary, he deliberately identified a non-person as the inventor. The fact that he may genuinely have believed that DABUS was the inventor is neither here nor there. The answer he gave to the question was a legal impossibility. This analysis does not involve the Comptroller in determining whether or not the answer given was factually accurate. On the contrary, it takes the answer given entirely at face value.
144. Nor did Dr Thaler identify "the derivation of his right ... to be granted the patent". He simply asserted that it was sufficient that he owned DABUS. As a matter of law, that is incorrect. Again, this analysis does not involve the Comptroller in determining whether or not the answer given was factually accurate, but takes the answer given at face value.
145. In my view support for this approach to the assessment of Dr Thaler's statements is provided by what Jacob LJ delivering the judgment of the Court of Appeal said in the context of the assessment of patentability in *Aerotel Ltd v Telco Holdings Ltd* [2006] EWCA Civ 1371, [2007] Bus LR 634 at [5]:

"... we accept Mr Birss's [counsel for the Comptroller's] submission that any pure question of law involved should be

decided during prosecution. It is not enough to get a patent past the application stage to show that as a matter of law it merely arguably covers patentable subject matter. ... Of course if a debatable question of pure fact is or may be involved at the application stage, things are different ...”

146. I would add that Mr Jehan, who argued this part of Dr Thaler’s case, accepted at one stage in his argument that, on Dr Thaler’s case, section 13(2)(a) required him to identify DABUS as the inventor. Mr Jehan said that this was in order to inform the public and third parties who might claim rights in respect of the inventions, a submission which is supported by *Nippon Piston*. No doubt this is part of the purpose of section 13(2)(a), but in my judgment another purpose is to give effect, at least to some extent, to the inventor’s paternity right conferred by section 13(1). Once again, however, machines do not have such rights.
147. It is not necessary for present purposes to consider what the position would be if an applicant for patent lied about the identity of the inventor or the applicant’s entitlement to apply for a patent, because it has never been suggested that Dr Thaler did any such thing. Nor is it necessary to consider the position of an applicant who states in good faith that they are unable to identify the inventor (although I am sceptical as to whether such a case would ever arise, since the applicant should at least be able to identify the group of persons who could have contributed to the devising of the invention).
148. It follows that, on the face of the Form 7s he filed, Dr Thaler did not comply with either of the requirements laid down by section 13(2), and the inevitable consequence is that the applications are deemed to be withdrawn. This is not to introduce some new, non-statutory ground for refusing patent applications. On the contrary, it gives effect to the statutory requirements that (i) the inventor must be a person and (ii) an applicant who is not the inventor must be able, at least in principle, to found an entitlement to apply for a patent in respect of the invention. If Dr Thaler were able to establish that the statute did not require the inventor to be a person and that, as a matter of law, he could derive his entitlement to apply for patents in respect of the inventions purely from his ownership of DABUS, then the position would be different. But, given that the applications do not comply with two important statutory requirements, it would not be right in my view to permit them to proceed, particularly since the statute provides no other mechanism for addressing the non-compliance.
149. Accordingly, I conclude that the hearing officer and the judge were correct to hold that both applications are deemed to have been withdrawn.

Disposition

150. For the reasons given above I would dismiss the appeal.