Intellectual Property Office

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14 February 2020

PATENTS ACT 1977

APPLICANT	Mr Stephen Mollah
ISSUE	Whether patent application GB 1503131.3 complies with sections 1(1)(c), 14(5)(a), 14(5)(b) and 14(3)
HEARING OFFICER	Dr C. L. Davies

DECISION

Introduction

1 Patent application GB 1503131.3 ("the application") entitled "Bitcoin Technology" was filed on 24 February 2015, with an earliest declared priority date of 11 February 2015. It was published as GB 2535237 A on 17 August 2016.

2 Following a number of rounds of correspondence between the examiner and the applicant, Mr Mollah, the examiner remains of the view that the scope of protection being sought is unclear and not well-defined contrary to sections 14(5)(a) and 14(5)(b); is not capable of industrial applicability as required by section 1(1)(c) and further is not sufficiently disclosed to allow a person skilled in the art to perform the invention as required by section 14(3).

3 With the position unresolved the applicant asked to be heard and the matter came before me at a hearing conducted in person at the Office on 25 November 2019. The issues of clarity, sufficiency and industrial applicability before me were set out in the examiner's pre-hearing report of 19 August 2019. As a private applicant, Mr Mollah represented himself at the hearing. I thank Mr Mollah for filing skeleton arguments prior to the hearing. I was assisted by Mr Marc Collins.

Compliance date

4 The extended compliance period expired on the 11 October 2019. Therefore, there will be no further opportunity to amend the application. The application will either be granted or refused in its present form.

The application

5 At the hearing Mr Mollah explained that the invention relates to Bitcoin technology which he claims to have invented in 2007, under the pseudonym Satoshi Nakamoto. Subsequently he published a "Bitcoin Whitepaper" in 2009 detailing the basic

information of the Bitcoin technology. Mr Mollah implemented the technology in 2009 and it is still used today.

6 Mr Mollah described Bitcoin technology as a decentralised digital data management system into which anybody can input their data to be recorded in the public ledger. This is hidden under the underlying technology which is called “Blockchain”. The system securely stores the data as well as being used for making transactions. Mr Mollah explained that Bitcoin is a decentralised digital financial service system in which only the hidden underlying technology can mine the data computationally using a mining process. The data cannot be altered, hacked or destroyed – it is everlasting in the network system.

7 Mr Mollah went on to describe how Bitcoin technology can be used for a globalised purpose such as governing systems and not just the Bitcoin system. The application relates to Bitcoin technology which is a network system and describes how to connect the computers interconnected to the network system by a specific sequence of nodes. It relies on complex mathematical systems using various algorithms. Mr Mollah explained that the whitepaper he published in 2007 detailed a simple Bitcoin system and did not disclose all the required elements of his invention.

8 The application consists only of two pages – one titled “Description” and one titled “Bitcoin Technology Claims”. There is also one Figure. The description describes the four inter-related features of Bitcoin Technology and certain terms relating to Bitcoin technology and gives a very brief indication of the underlying principle behind that aspect of the technology. The page titled “Bitcoin Technology Claims” reads:

> *'Bitcoin Technology' is a two words phrase meaning the expressions Bitcoin as the Technology in relation to Technology and Innovations. Bitcoin Technology in the Computer Science Technology reserves the terminology, Bitcoin Technology as Computational terms which in relation to Digital Financial System and Virtual Electronic Currency. Bitcoin Technology is the Software that consists with Bitcoin Blockchain and Bitmark Formula, which is Bitmark Algorithm for computation to create or mine the Electronic Cash Digitally Sealed by Algorithm (ECDSA). Bitcoin Technology has the four dimensional meanings, which are as follows: Bitcoin itself is the Bitcoin Technology the Software; Bitcoin Format is the Bitcoin Blockchain, Bitcoin Bitmark Formula is the ECDSA and Bitcoin Digital Currency which is a Digital Token to store of Economic Values. The Virtual Currency encrypted by digital ECDSA signature. Electronic Wallet where the Bitcoins are stored. Bitcoin Trans Cash. Bitcoin Gold Card, Bitcoin Debit Card, Bitcoin Credit Card, Bitcoin Investment, Credit and Commerce. Bitcoin Technology reserves the rights of the use of the word Bitcoin or bitcoin in corporate terms. The word 'Bitcoin or bitcoin' is the Trade Mark for Bitcoin Technology for financial service providing methods or system software. Computer Programs for Digital Financial System Protocols. Bitcoin Blockchain Network and Proof of Transaction. Computer Software for Digital Financial Transaction electronically or non electronically. Pre-Paid Mobile SIM Card, calling cards; Software for online Cash Transfer via email, Text Mail, or through other messaging services; Network Broadcasting and Advertisements. Computer Programs Transmission via Internet or other electronic methods. Information and data storage software system. Internet and Electronic Telecommunication Networks. Banking or Money transferring services. Private*

Limited or Public Limited or unlimited company. Commercial electronic gamming industries. Commercial advertisements Logo, words or Bitmark B. Commercial or non-corporate licensing. Gambling, lottery or pool. Money dispenser machine. Microchip, mobile phone, TV programs, Bitcoin Films, Books and media publication such as news magazine. Bitcoin Stock Trading and providing electronic bank check services to the Banking industry or to the Government or any other financial institutions. Bitcoin for financial investment and security as Bitcoin Bonds or Bitcoin Credit.

9 I will refer to the above "Bitcoin Technology Claims" as "the claim" in this decision.

The issues to be decided

10 The following issues are before me to decide: (i) clarity of the claim i.e. whether the claim defines the matter for which protection is being sought in a clear and concise way as set out in sections 14(5)(a) and 14(5)(b) of the Patents Act 1977 ("the Act"); (ii) whether the invention is capable of industrial applicability as set out in section 1(1)(c) of the Act and (iii) whether the invention is sufficiently disclosed to allow a person skilled in the art to perform it as set out in section 14(3) of the Act. I shall deal with each of these in turn.

The law

11 The examiner has raised an objection under sections 1(1)(c), 14(3), 14(5)(a) and 14(5)(b) of the Act that the invention is not patentable because it does not satisfy one or more of these requirements. The relevant provisions of these sections of the Act are shown in bold below:

Industrial applicability

Section 1(1)

A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –

(a) the invention is new;

(b) it involves an inventive step;

(c) it is capable of industrial application;

(d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;

and references in this Act to a patentable invention shall be construed accordingly.

12 The manner in which condition (c) is to be assessed is set out in section 4 which reads:

Section 4(1)

An invention shall be taken to be capable of industrial application if it can be made or used in any kind of industry, including agriculture.

13 In *Human Genome Sciences* [1] Lord Neuberger summarized the EPO Technical Board of Appeal's approach regarding the requirements of Article 57 EPC in relation to biological material in a set of fifteen points. Whilst the majority of the fifteen points relate specifically to the biomedical fields; the principles set out in points 1-4 can be applied broadly when considering the industrial application of a patent. The first four points for consideration are as follows*:*

i) The patent must disclose "a practical application" and "some profitable use" for the claimed substance, so that the ensuing monopoly "can be expected [to lead to] some … commercial benefit";

ii) A "concrete benefit", namely the invention's "use … in industrial practice" must be "derivable directly from the description", coupled with common general knowledge;

iii) A merely "speculative" use will not suffice, so "a vague and speculative indication of possible objectives that might or might not be achievable" will not do;

iv) The patent and common general knowledge must enable the skilled person "to reproduce" or "exploit" the claimed invention without "undue burden", or having to carry out "a research programme";

Sufficiency

Section 14(3)

The specification of an application shall disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.

14 The purpose of section 14(3) of the Act is to prevent an applicant laying claim to products or processes which the teaching of the patent application does not enable the skilled addressee to perform. In other words, does the patent application provide enough information for a person with a reasonable knowledge and understanding of the technical area described in the application to be able to carry out the invention?

15 In *Eli Lilly*[2] at [239] Kitchin J gave the following summary of the relevant principles, to be applied when assessing whether an application satisfies this section of the Act:

"The specification must disclose the invention clearly and completely enough for it to be performed by a person skilled in the art. The key elements of this requirement which bear on the present case are these:

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[1] *Human Genome Sciences v Eli Lilly [2011] UKSC 51, [2012] RPC 6*
[2] *Eli Lilly v Human Genome Sciences [2008] RPC 29*

(i) the first step is to identify the invention and that is to be done by reading and construing the claims;

(ii) in the case of a product claim that means making or otherwise obtaining the product;

(iii) in the case of a process claim, it means working the process;

(iv) sufficiency of the disclosure must be assessed on the basis of the specification as a whole including the description and the claims;

(v) the disclosure is aimed at the skilled person who may use his common general knowledge to supplement the information contained in the specification;

(vi) the specification must be sufficient to allow the invention to be performed over the whole scope of the claim;

(vii) the specification must be sufficient to allow the invention to be so performed without undue burden."

16 Whilst there is only one provision under the Act, it is now settled law that sufficiency in terms of the disclosure being clear and complete enough for the invention to be performed by the person skilled in the art is approachable in three different ways:

(1) Classical insufficiency

(2) Insufficiency by ambiguity

(3) Insufficiency by excessive claim breadth

In this instance the examiner considers the disclosure to be insufficient by classical insufficiency.

17 Classical insufficiency relates to the situation where there is no enabling disclosure. In *Zipher Ltd*[3] Floyd J offers the following useful summation of the objection:

"Classical insufficiency arises where the express teaching of the patent does not enable skilled addressee to perform the invention. This type of insufficiency requires an assessment …of the steps to which it would be necessary for the skilled reader or team to take in following the teaching of the specification and in order to arrive within the claim. Plainly the steps should not include inventive ones. But a patent can also be found insufficient if the steps can be characterised as prolonged research, enquiry or experiment."

18 It has long been established that in order for an application to be sufficient it must include at a minimum something amounting to one embodiment or example that can be put into effect. However, in all situations, sufficiency is a question of fact – does the patent enable the invention to be worked across the breadth of the claim? As

[3] *Zipher Ltd v Markem Systems Ltd [2009] FSR 1*

noted in *Kirin-Amgen Inc*[4] "Whether the specification is sufficient or not is highly sensitive to the nature of the invention. The first step is to identify the invention and decide what it claims to enable the skilled man to do. Then one can ask whether the specification enables him to do it."

Clarity of claims

Section 14(5)

The claim or claims shall –

(a) define the matter for which the applicant seeks protection;

(b) be clear and concise;

(c) be supported by the description; and

(d) relate to one invention or to a group of inventions which are so linked as to form a single inventive concept.

Arguments and analysis

19 Firstly, I will consider sections 14(5)(a) and 14(5)(b) and the issue of clarity of the "claim". The examiner has argued that the "claim" does not set out any features of an invention, but rather provides some background, legal and financial information about Bitcoin and Bitcoin technology. Such information cannot be patented since it does not define an invention. Furthermore, the examiner has said that the "claim" is not in the correct format that allows it to be clearly understood. The "claim" includes multiple sentences and does not define any technical features of an invention.

20 Mr Mollah has not provided any argument in his skeleton argument or at the hearing as to why the "claim" in its present format meets the requirement of sections 14(5)(a) or 14(5)(b). Mr Mollah explained that the application relates to technical equipment and systems which use interconnected computers via complex nodes. Mr Mollah also enquired as to whether he could add any further information to clarify his invention. I explained that, even if the compliance period had not expired, it was not possible to add any matter that was not supported by the application as filed as to do so would contravene section 76 of the Act.

21 Whilst the application may relate to a system which is implemented using technical equipment such as computers executing complex algorithms, this does not mean that the application discloses technical features of an invention. Furthermore, the application does not contain a single embodiment or example of how the system is implemented, how the computers are connected using the nodes described by Mr Mollah at the hearing, the mining process for mining the data; or how a user would use the system to input data and perform a transaction. The application is absent of any technical features in the sense of defining an invention.

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[4] *Kirin-Amgen Inc v Hoechst Marion Roussel [2005] RPC 9*

22 Mr Mollah stated that the application relates to very complicated technology which he conceded has not been explained broadly in the application. He explained that the whitepaper published in 2009 set out the basic information for the Bitcoin technology but that the in-depth information has been kept secret and not published for fear of infringement.

23 Taking careful consideration of what Mr Mollah has told me at the hearing and also what the examiner has put forward, I find myself in agreement with the examiner's argument. The "claim" clearly does not set out any technical features of an invention and further is not in the correct format. Furthermore, as far as I can tell, the description does not set out any technical features of an invention; merely describing the four inter-related features of Bitcoin Technology, defining certain terms relating to Bitcoin technology and giving a very brief indication of the underlying principle behind that aspect of the technology does not present any technical features for the purpose of defining an invention. Therefore, to my mind, the specification as a whole does not set out any technical features which could constitute an invention.

24 In my view, no invention subsists in the specification as filed. It follows therefore that an invention has not been sufficiently disclosed as required by section 14(3) and is therefore classically insufficient. Furthermore, since an invention has not been disclosed, there is nothing in the specification that is capable of industrial application as required by section 1(1)(c).

25 The examiner has explained also that were an actual invention based on Bitcoin technology to be defined in the claims (without adding matter – which it clearly could not), then the specification would not be clear enough or complete enough to allow the invention to be performed by a person skilled in the art (a notional person who works in the relevant field). This indicates that the invention is not sufficiently disclosed contrary to section 14(3). I agree with the examiner.

26 At the hearing Mr Mollah described himself as an "economic scientist" and I asked if other economic scientists could implement his invention from what is disclosed in the specification. Mr Mollah stated that another economic scientist would understand his invention from the specification, but it could not be implemented from the specification alone and his further technical papers would be needed to enable implementation. This would also indicate that an invention has not been sufficiently disclosed.

Conclusion

27 I therefore conclude that the "claim" does not clearly and concisely define an invention for which the applicant seeks protection; the specification does not sufficiently disclose an invention such that a person skilled in the art would be enabled to perform it and further does not disclose an invention which is capable of industrial application.

28 As discussed above in paragraph 4 above, the compliance period expired on 11 October 2019 and therefore there is no further opportunity for amendment of the application.

29 I therefore refuse the application under Section 18(3) as failing to comply with sections 1(1)(c), 14(3), 14(5)(a) and 14(5)(b).

Appeal

30 Any appeal must be lodged within 28 days after the date of this decision.

C. L. Davies
Deputy Director, acting for the Comptroller