



## PATENTS ACT 1977

APPLICANT	Mr Martin Lister
ISSUE	Whether patent application GB1510481.3 complies with sections 14(3) and 1(1)(a)
HEARING OFFICER	Dr C L Davies

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### DECISION

#### Introduction

- 1 This decision concerns patent application GB1510481.3 entitled “Artificial heart”, which was filed on 13<sup>th</sup> June 2015 by Mr Martin Lister, an unrepresented applicant, and published as GB2539643 on 28<sup>th</sup> December 2016.
- 2 On 21<sup>st</sup> October 2016 the examiner issued a combined search and examination report, in which he considered the invention to be insufficient and provided examples of prior art documents which he considered to render the invention as lacking novelty/inventiveness. The examiner also recommended the applicant seek advice from a patent agent. Further correspondence with the applicant failed to resolve matters, and in a final letter dated 18<sup>th</sup> April 2017 the examiner raised essentially the same objections as those detailed within the first combined search and examination report, taking opportunity to expand on the sufficiency objection. In this letter, the applicant was also informed that the application would be sent to a Hearing Officer shortly after the latest date for reply (2<sup>nd</sup> May 2017) for a final decision. No request for a hearing was made and the matter has come before me to decide, based on the papers on file.
- 3 I note the applicant submitted a single amended claim on 24<sup>th</sup> April 2017.

#### The invention

- 4 The application as originally filed consists of two figures, one page of description which references the figures and one independent claim.
- 5 The invention relates to an artificial heart comprising left and right chambers each of which comprise four magnetic turbine blades arranged inside a cylindrical magnet such that magnetic repulsion between the cylindrical magnet and the magnetic

turbine blades causes the blades to rotate to pump the blood in the chamber, either to the lungs (right chamber) or to the body (left chamber).

### **The claim**

6 The originally filed independent claim reads as follows:

7 Claim 1:

*“An artificial heart”*

8 The single amended Claim 1 filed on 24<sup>th</sup> April 2017 reads as follows:

*“The pumps of the left side and the right side of the artificial heart have pumps that have four magnets which have angled south pole ends which are inside a cylindrical magnet which is south pole facing the four inner magnets so that the four inner magnets rotate due to magnetic repulsion and thus the turbines rotate and cause the blood which is in the pump of the left side and right side to be circulated”*

I note that no amendments to the description have been filed.

### **The issues to be decided**

9 The main issues for me to decide are (i) sufficiency i.e. whether the invention is disclosed in a manner clear and complete enough for it to be performed by a skilled person as required by section 14(3) of the Patents Act 1977 (herein after the “Act”) and (ii) whether the invention is novel as required by section 1(1)(a) of the Act.

10 I will first consider the issue of sufficiency and only if I find the application to comply with section 14(3) will I go on to consider novelty.

11 I note that only Claim 1 as originally filed has been considered by the examiner. I will consider amended Claim 1 as filed on 24<sup>th</sup> April 2017.

### **The law**

12 Section 14 sets out certain requirements that a patent application must fulfil. Section 14(3) sets out the need for a sufficient technical disclosure:

*“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”*

13 Section 1(1) sets out the requirement that an invention protected by a patent must be both novel and involve an inventive step as follows:

*“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...”*

- 14 Section 2 sets out what novelty means; subsections (1) to (2) are relevant here:

*“2(1) An invention shall be taken to be new if it does not form part of the state of the art.*

*2(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.”*

### **Arguments and analysis**

- 15 In his examination report dated 21<sup>st</sup> October 2016, the examiner objected to insufficient disclosure, pointing out to the applicant that:

*“...[Your] application contains very little technical information, because it only has two figures and a list of the features shown in the figures. There is no information about how the invention works.” [my emphasis added]*

- 16 In a further letter of 18<sup>th</sup> April 2017, the examiner maintained and expanded on the insufficiency objection to highlight the absence of a power source and to challenge the lack of disclosure on how the invention works:

*“...there is no disclosure of how the “turbine blades” are caused to rotate such that the artificial heart would act to pump blood as described. It is considered that the arrangement of the array of four magnets within the cylindrical magnet would not cause the necessary rotation on its own. Although electric motors commonly use magnets, an external energy supply is also required to cause rotation. No such external energy supply is mentioned in your application, and so, as disclosed, your artificial heart would not operate as intended. Further, the skilled person would be placed under undue burden in trying to adapt your artificial heart such that it would operate as intended. For these reasons your invention is not sufficiently disclosed.” [again, my emphasis added].*

- 17 I note that the applicant did not provide any further explanation or detail to address the examiner’s objections regarding sufficiency, other than that given in his letter dated 8<sup>th</sup> February 2017 in which the applicant states *“I have given sufficient information for a person of ordinary skill levels in the field of the invention to build and operate this invention. I have supplied sufficient technical information therefore.”*

- 18 To satisfy section 14(3), the specification of the application is required to 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.

- 19 I have considered the description, drawings and both the original and amended claims very carefully, and I have also considered the objections and comments presented by both the applicant and examiner in their correspondence. It is my view that despite the applicant’s rebuttal, he has not provided any real grounds why the examiner was incorrect in his conclusions regarding sufficiency. As far as I can deduce the invention is an artificial heart containing an arrangement of magnets

which provide, as a result of that arrangement, continual rotation of turbine blades to pump blood within a chamber. There is no mention of how this works and in the absence of an external energy source, in my view, also operates contrary to laws of physics. In his letter dated 5<sup>th</sup> December 2016 where the applicant has sought to tell the examiner why the example documents do not match his invention, the applicant states in relation to US2002/0002321 that *"It uses a motor and thus an energy supply is needed, mine doesn't."* This suggests that the applicant's invention doesn't require an external energy supply. However without an external energy supply it is not clear to me how the device would work i.e. how the rotation of the turbine blades is started and maintained.

- 20 Furthermore, even if the disclosed arrangement of magnets could result in some rotational motion, the invention as described would be subject to subsequent energy losses within the system (e.g. from friction etc.) and so would require an energy input for it to continue operating. As such the artificial heart as disclosed would need to be adapted i.e. by the addition of an external energy source, in order for it to operate as intended.
- 21 It is my view that there is not a sufficient disclosure of the invention which would enable a skilled person to perform the invention as claimed.
- 22 Having decided that the application lacks sufficiency, I do not need to go on to consider novelty of amended Claim 1.

### **Conclusion**

- 23 I conclude that the invention as claimed in application GB1510481.3 does not comply with section 14(3) of the Patents Act 1977 because the invention is not disclosed in a manner which is clear and complete enough for it to be performed by a skilled person.
- 24 I can find no further disclosure in the specification upon which patentable claims might be based. I therefore refuse the application under section 18(3) for failure to comply with section 14(3).

### **Appeal**

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

C L Davies

Deputy Director, acting for the Comptroller