Intellectual Property Office

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15 June 2015

PATENTS ACT 1977

APPLICANT Dr Nduka

ISSUE Whether patent application GB 1007827.7 complies with section 14(3) of the Act.

HEARING OFFICER Dr Jim Houlihan

DECISION

Introduction

1. This decision relates to patent application GB1007827.7 entitled “Robotic rescue systems”. The application was filed on 11 May 2010 and published as GB2474318 on 13 April 2011. The applicant Dr Nduka, was not represent by a patent professional in these proceedings.

2. There have been a number of rounds of correspondence between the examiner and the applicant. However, the applicant was not able to persuade the examiner to alter his view that the claims were not sufficient (section 14(3)) and therefore did not comply with the Patents Act (hereinafter “the Act”). The examiner considered an impasse had been reached and offered Dr Nduka a hearing. This was arranged but Dr Nduka was unable to attend as he said he was ill. The Hearings Clerk offered to postpone the hearing but Dr Nduka decided to opt for a decision on the papers.

3. I have carefully reviewed the application and all the correspondence between Dr Nduka and the examiner. I note that Dr Nduka indicated on several occasions that he considered he was not treated fairly by the IPO in the prosecution of this application, although this was not directed at particular individuals and he did not file any evidence to substantiate his point. That is not an issue for me to address here.

4. The date by which this application could be put in order for grant, the ‘compliance date’, was 23 December 2014. Dr Nduka was made fully aware of the consequences of this and, in particular, that he could extend the compliance period “as of right” by filing the appropriate form and a fee. He did not do this.

5. As the compliance period has now passed the sole question for me to determine is whether the application complied with the section 14(3) of the Act on the 23 December 2014.

The specification

6. The description runs for less than one side of A4 and begins with a statement that reads "*These are human mannequin type robots used to search and destroy explosives and security scan checks with legs that are interchangeable in three different varieties*".

7. The description goes on to state that the robot comprises a computer processing unit which is self-sufficient and encrypted so that it is not disabled by hackers; sensors to detect objects and movements to avoid missiles and objects; manipulative hands; and three types of interchangeable legs that are detachable at knee level, having a magnetic point of attachment that allows them to swivel through 180-360 degrees. It says the robot runs on electric batteries with the option for a double layered overall with circulating liquid nitrogen to keep temperature below night vision levels. The claim says that the robot has the ability to use tools fitted on a tool belt and is able to search and destroy IEDs or disable IEDs or other explosives.

8. There are five drawings which form part of the specification. Fig 1 shows a rotatable knee joint and Fig 5 shows a humanoid form of a robot as follows:

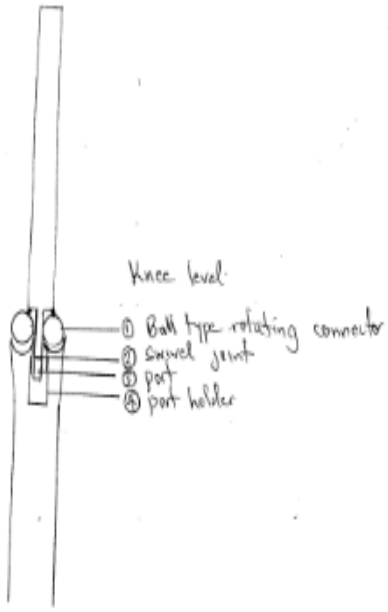

Fig 1

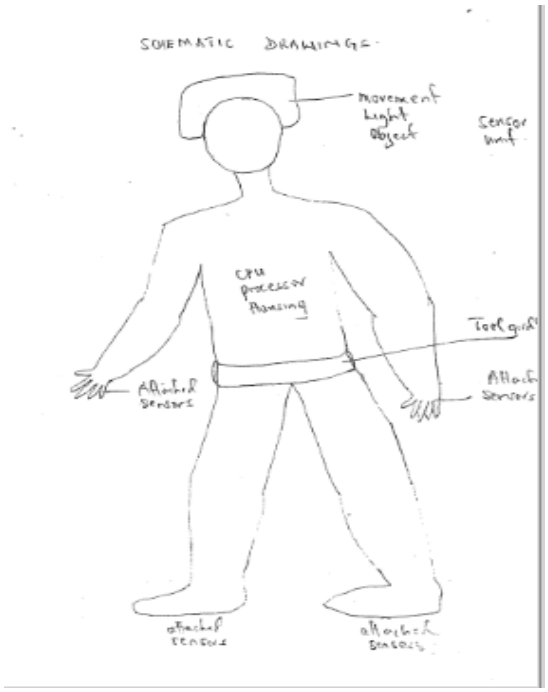

Fig 5

9. Also shown in specification are drawings of roller track type legs (Fig. 2), a suction cap (Fig. 3) and a back pack and battery (Fig. 4).

The claim

10. There is only one claim which reads:

"*Robot, four foot height, autonomous with interchangeable legs with the ability to use tools fitted on a tool belt having the ability to find and destroy ied (sic) or disable ied (sic)/other explosives; such robots have function of detonating them in a safe way (if it was not possible to disable) and can work in different types of terrain as it has uniquely fitted interchangeable legs, these robots are made from metal alloys which have electronic transmitting properties in their fibres reducing needs for lots of wiring and are fitted with multiple type sensors on the hands, legs and head gear. These robots have extra unique feature of being able to turn 180-360 degrees in a stationary position due to a unique connector at knee level*".

The law

Sufficiency

11. Section 14(3) of the Act requires that *"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"*.

Arguments

12. The examiner had initially raised objections about the clarity and the inventiveness of the claim in his first examination report of 23 December 2013 but he did not pursue these.

13. In his final letter to Dr Nduka dated 12 March 2015 the examiner summarised his objection under section 14(3) that the claim refers to features which are not disclosed clearly and completely enough to be performed by a person skilled in the art and highlighted the following phrases in the claim in relation to this objection: "*the ability to find and destroy ied or disable ied/other explosives*"; "*metal alloys which have electronic transmitting properties in their fibres*" and "*multi type sensors*".

14. In several emails Dr Nduka indicated that he considered the claim is clear. His correspondence also indicates that he considers his robotic invention is the unique and inventive. For example, in one of his skeleton arguments Dr Nduka says:

"*The patentability is not in doubt s (sic) it is new and being a product claim and novelty of use claim, it is shown that it disables and detonates bombs, it has rotational mechanism that allows it to have interchangeable legs that allow it to work in complex terrain and it has efficiency against bombs wit (sic) proximity fuses and triggers which human and other robots do not go near...the patent is both an idea and a product that is new, with a new technical invention, I was first to apply and the ipo search said that there are no other robot of that nature*"

15. I understand from this that Dr Nduka considers that because the examiner did not pursue his objections under inventive step that the invention is unique - novel and inventive. However, the examiner's report of 31 March 2014 indicates he did not pursue inventiveness because of the fundamental nature of his objection on the grounds of insufficiency and therefore he focussed that report and his subsequent reports on the sole issue of sufficiency.

16. I consider that the question of inventive step (or novelty) is distinct from sufficiency. It is possible for an idea or an alleged invention to be novel and inventive e.g. no-one has described it before, but also for it to be insufficient insofar as no-one could actually perform or make the alleged invention. Thus, I do not consider that the question of novelty or inventive step is relevant to this decision.

Analysis

17. In preparation for this decision I drew Dr Nduka's attention to two authorities which I regard as providing useful guidance on how I should approach the issue of sufficiency.

18. The first is The House of Lords judgement in *Kirin-Amgen Inc v Hoechst Marion Roussel Limited [2005] RPC 9*. Here, Lord Hoffmann said at paragraph 103:

"*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*".

19. Kitchin J in his judgement in *Eli Lilly and Co v Human Genome Sciences, Inc [2008] RPC 29* provides some further useful guideposts in determining the question of sufficiency. He said at paragraph 239:

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.

20. With these tests in mind, I will now attempt to determine what the claimed invention is.

21. Having read the claim, I can identify a number of features of the robot:

I. It has interchangeable legs which can work in different types of terrain.

II. It has a tool belt fitted with tools having the ability to destroy or disable explosives.

III. It is made of metal alloys that may transmit electronic signals.

IV. A knee level connector enables the robot to turn 180 to 360 degrees when stationary.

V. It is fitted with sensors on its hands, legs and head-gear.

22. The claim also details a number of desired outcomes, for example "*ability to use tools*", "*ability to find and destroy ied or disable ied/other explosives*" and "*detonating them in a safe way*". Such phrases might normally be objectionable as they define a result achieved. However, for the purposes of this decision I am content to construe the claim as meaning that the robot must be suitable for achieving these aims.

23. I do not think the requirement that the robot is "four feet in height" is particularly critical here. If I find that a robot having the features claimed is sufficient I would assume it could be scaled to a height of four feet.

24. While the claim could be clearer, as I have been able to identify the features that make up the invention I will focus my decision on whether the claim as I understand it is sufficient.

25. In my opinion, the invention concerns a robot made of metal alloy with interchangeable legs where those legs have a connector than enables the robot to turn between 180 and 360 degrees. It also has a belt which can hold tools. It has sensors in its hands, legs and headgear. It contains a computer processor. This robot must be suitable for use in different terrains and be able to find and disable or detonate explosives in a safe way.

26. Now I ask the question whether the specification as a whole enables the skilled person to make this invention. Firstly though, I need to consider the characteristics of the skilled person.

27. I understand that military robots have been known since World War II. The prior art (JP2001347476 and WO2009124951) which was cited by the examiner in his first report shows that humanoid robots with interchangeable parts were known before the application was filed.

28. On this basis, I consider the skilled person would be a mechanical engineer, or team of engineers, with skills in electronics who have the ability to make robotic devices in the military area.

29. I now turn to the critical question: would this skilled person or persons, armed with their common general knowledge and the information provided in the specification as a whole (the claim, description and drawings) be able the make the invention as I defined it above? Having carefully considered the entire specification and Dr Nduka's submissions I do not believe they would for the following reasons.

30. While the skilled person could arguably make a rotatable knee joint that could pass through 180-360 degrees, on the basis on Figure 1, and legs that are interchangeable there is no information about how to actually achieve turning the robot in a stationary position nor how these features could be configured to enable the robot to navigate different terrains. There is no detail at all about the sensors and how these sensors relay information for the robot to function in disabling or detonating devices, or to navigate different terrains.

31. The presence of a tool-belt does not provide sufficient information about how these tools would be used by an autonomous device. The legend to Figure 5 describes a CPU (which the skilled person would understand to mean "central processor unit") but there is no information whatsoever about how data can be processed to achieve the claimed functions of the robot. Similarly, there is no detail at all about how the metal alloys in the form of fibres should be constructed or "wired" to enable the robot to function.

32. I am prepared to accept that there are bomb disposal devices that could be configured in a robotic form but the Act deliberately requires a patent to disclose enough information to enable the skilled person to perform the invention. I cannot see any information in the specification that describes how robot is able to find and disable or detonate explosive devices.

33. What I find is that the specification in this case simply details an array of materials, components and features of a robot: a tool belt fitted with tools; metal alloy fibres; interchangeable/detachable legs at the knee level with a magnetic attachment point; a rotating knee joint; a suction cup; a computer processing unit; manipulative hands; electric batteries; sensors for objects, lights and movement located in headgear, arms and legs; optionally an overall filled with liquid nitrogen.

34. Having provided this information the specification essentially says to the skilled person(s): “now make a robot with those components, materials and features that is suitable for detecting and disabling/detonating explosive devices”. It does not, however, tell the skilled person how to make the robot.

35. To my mind the skilled person or a team of skilled persons armed with those components, materials and features would have to undertake considerable research, enquiry and experiment, significantly beyond routine trial and error, to be able to make such a robot. Therefore, I consider that the specification does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art of robotics.

Conclusions

36. I hold the specification is insufficient and therefore refuse the application as it does not comply with section 14(3) of the Act.

37. I note that there are outstanding objections in relation to the clarity of the claim (section 14(5(b)) and its inventiveness (section 1(1)(b) and section (3)) which I have not considered here. These objections were not pursued by the examiner and in particular not stated in the examiner’s final letter to the applicant (12 March 2015) in preparation for this decision and therefore the applicant did not have the opportunity to fully argue them. However, because the compliance period has passed and the opportunity for extending it has lapsed, I consider that the questions of clarity and inventiveness are now moot given that I have refused the application under section 14(3) of the Act.

Appeal

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

Jim Houlihan
Deputy Director acting for the Comptroller