



## PATENTS ACT 1977

APPLICANT                                      General Electric Company

ISSUE                                              Whether patent application number  
                                                            GB0910548.7 complies with Section 1(1)(b)

HEARING OFFICER                              Dr. Stephen Brown

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### DECISION

#### Introduction

- 1 This application was filed on 18th June 2009 with a claimed priority of 25<sup>th</sup> June 2008 (claiming priority from US 12/145596). It was published as GB 2 461 165 A on 30<sup>th</sup> December 2009.
- 2 During the examination process the applicants were unable to persuade the examiner that the application complied with Section 1(1)(b) of the Patents Act 1977 (the Act). The matter came before me at a hearing on 11<sup>th</sup> July 2013 which was attended in video conference by the attorney for the applicants, Mr William Illingworth-Law. It was also attended in person by the examiner, Mr Brendan Churchill, and an assistant to the Hearing Officer, Mr Kingsley Robinson.
- 3 Prior to the hearing the applicants filed five auxiliary requests. After the hearing a sixth auxiliary request was filed on 27<sup>th</sup> August 2013. I will address all six auxiliary requests in this decision.

#### The invention

- 4 The current set of claims was filed on 29<sup>th</sup> April 2013 and contains one independent claim, claim 1, which reads as follows:

*A pressure cuff comprising:*

*a sleeve; and*

*a cuff bladder comprising a bladder width of 9.2 +/- 2.1 centimetres and a bladder length of 24.6 +/- 4.2 centimetres;*

*wherein the bladder length and bladder width dimensions provide precise non-invasive blood pressure measurements when the pressure cuff is applied to a forearm having a circumference in the range of 27 to 37 centimeters.*

5 The claims of auxiliary requests 1-6 will be discussed later.

## **The law**

6 Section 1(1) of the Act states that:

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

....  
*(b) it involves an inventive step;*  
....

7 Section 3 of the Act goes on to state that:

*An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).*

8 Section 2(2) of the Act states:

*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.*

9 In addition to statute, the courts have long used the so called *Windsurfing* test to assess issues of inventive step. This test was reformulated by the Court of Appeal in *Pozzoli*<sup>1</sup>. Paragraph 23 of this decision lays out the test as:

*(1) (a) Identify the notional "person skilled in the art"*

*(b) Identify the relevant common general knowledge of that person;*

*(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;*

*(3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;*

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<sup>1</sup> *Pozzoli Spa v BDMO SA & Anor* [2007] EWCA Civ 588.

*(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?*

10 I will now take each step in turn:

***The 'person skilled in the art' and their relevant common general knowledge***

- 11 The examiner identified the person skilled in the art to be “a person or team of people who work with mechanical and electronic apparatus for measuring physiological properties of medical subjects”. I believe that this is a reasonable assessment and note that the applicants did not disagree or suggest any alternatives.
- 12 As for the common general knowledge of such a skilled person, I believe that they would be aware that various designs of blood pressure measurement cuffs exist of varying sizes and shapes. Furthermore, their common general knowledge would also include the fact that the accuracy of results produced by a blood pressure cuff is affected by the size and shape of the cuff compared to the size and shape of a patient's arm. Also, that the most accurate cuff size and shape for a given patient could be determined by empirical analysis.

***Identify the inventive concept of the claim***

- 13 Claim 1 is clearly directed to a pressure cuff comprising a sleeve and a bladder, the latter having the specified dimensions. The description and claim 11 also refer to a system for measuring blood pressure comprising a blood pressure monitor and a pressure cuff as defined in claim 1. Claim 1 itself, however, is not limited only to being part of such a system or to such an application. Thus it is difficult to see exactly what limitation the final paragraph of claim 1 provides to the scope of the invention.
- 14 At the hearing, all of the arguments presented before me were directed to a blood pressure measurement cuff when used on the forearm. In light of this, and with an eye on the auxiliary requests, I will adopt a narrow interpretation of claim 1, namely as being limited to being part of a blood pressure measurement system with the cuff applied to a forearm. While I am not convinced that this is the correct construction in law, it is a useful one for the purposes of the decision before me. If I decide that claim 1 narrowly construed is not inventive, then a broader construction will not save it. Conversely, if I decide that the narrow construction is patentable but not the broader, then the applicants could amend accordingly.
- 15 Thus, at least for the sake of argument, I construe the inventive concept of the claim to be a forearm blood pressure measurement cuff with a bladder width of 9.2 +/- 2.1 centimetres and a bladder length of 24.6 +/- 4.2 centimetres.

***What differences exist between the state of the art and the inventive concept of the claim?***

- 16 The examiner has identified a number of relevant prior art documents. I believe that they show that it was known that blood pressure measurement cuffs could be located on the forearm. At the hearing Mr Illingworth-Law argued that disclosures of measuring blood pressure on the forearm were only ever throwaway comments, often appearing near the end of a patent application, and that as such the skilled person would not take them seriously.
- 17 I am afraid that I must disagree with this argument for two reasons. Firstly, no matter how brief some disclosures of forearm use are, they nonetheless still disclose the possibility. The examiner found such 'brief' disclosures in JP 2007 296 188 and EP 2 002 785. I am grateful to Mr Illingworth-Law for correctly pointing out that the latter was published after the priority date of the current application and is therefore not relevant with regards to inventive step. However, JP 2007 259 911 and WO 2007 111 119 are equivalent applications which were published before the priority date and can therefore stand in place of EP 2 002 785.
- 18 Secondly, not all the disclosures are 'brief'. Both US 2005 070 805 and GB 1 224 510 show blood pressure monitoring systems that use two cuffs, one of which is intended for use on the forearm. Also there is DE 1 975 1564 which describes a system with interchangeable cuffs, one of which is designed for use on the forearm.
- 19 Thus I conclude that the difference between the state of the art and the present invention lies solely in the specific dimensions claimed.

***Do those differences constitute steps which would have been obvious to persons skilled in the art or do they require any degree of invention?***

- 20 As discussed above, the skilled person would appreciate that the accuracy of the forearm blood pressure measurement cuffs disclosed in the prior art would be affected by changing the shape or size of their cuff bladders. It would thus be obvious for them to consider trying different shapes and/or sizes to find the optimum values for accurate measurement in a given situation. Pages 5-6 of the description of the current application make it clear that the dimensions specified in claim 1 were arrived at by just such a process of trial and error. It is my view that such experimentation amounts to no more than non-inventive workshop modification. I thus conclude that the invention as defined in the current claim 1 lacks the required inventive step.

**Auxiliary Requests**

- 21 I will now briefly consider the auxiliary requests:
- 22 Auxiliary requests 1 and 2 further limit the wording of claim 1 to a "forearm pressure cuff" and "a forearm pressure cuff for measuring blood pressure" respectively. Due

to the narrow construction adopted earlier these claims are already covered by the analysis of inventive step presented above.

- 23 Auxiliary request 4 is directed to a forearm pressure cuff for measuring blood pressure and includes a further limitation defining the ratios of the bladder length and width to target limb circumference. Again, I believe that the skilled person would know that these ratios would affect accuracy and would consider it obvious to try different ratios in order to obtain acceptable results. Thus I also find the claims of this request obvious.
- 24 Auxiliary request 6 is directed to a blood pressure monitoring system comprising a blood pressure monitor coupled pneumatically to the pressure cuff of request 4. These extra limitations however are all part of the common general knowledge of the skilled person. Indeed the narrow construction adopted earlier took them all as implicit. Thus the claims of this request are already covered by my analysis in regard of request 4, immediately above.
- 25 Auxiliary request 3 relates to a forearm pressure cuff for measuring blood pressure which further has a generally arcuate shaped sleeve. Auxiliary request 5 relates to a forearm pressure cuff for measuring blood pressure with an arcuate shaped bladder with inner and outer edges that define an angle of approximately 23.4 degrees.
- 26 Arcuate pressure cuffs *per se* are known. The examiner cited EP 1 077 043, which discloses an arcuate sleeve and also mentions the possibility of arcuate bladders in paragraph 0007. The examiner also cited US 4 635 635 which discloses an arcuate sleeve and bladder albeit for use in a tourniquet rather than a blood pressure measuring system. While neither specify the angles defined by their inner and outer edges, this again would appear to be no more than simple workshop variation.

## **Decision**

- 27 I have found that claim 1 of the application lacks an inventive step contrary to section 1(1)(b) of the Patents Act. I have read the specification and all of the auxiliary requests carefully and I can see nothing that could be reasonably expected to form the basis of a valid claim. I therefore refuse this application under section 18(3).

## **Appeal**

- 28 Any appeal must be lodged within 28 days.

**Dr. Stephen Brown**

Deputy Director, acting for the Comptroller