Intellectual Property Office

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PATENTS ACT 1977

APPLICANT Derek Gordon Brown

ISSUE Whether patent application GB 1206106.5 complies with sections 1(1)(c) and 14(3)

HEARING OFFICER Mrs S E Chalmers

DECISION

Introduction

1 The application relates to an apparatus for generating electricity employing an electric pump to raise a working liquid to a height, and subsequently using this liquid to generate electricity as it descends to the lower level. It comprises an elaborate arrangement of components which interact to move tanks and operate turbines in a scalable array of similar devices. The examiner considers that the apparatus cannot operate in the way described as it would contravene well known physical laws, and is therefore not patentable. The applicant disagrees and has asked for the matter to be decided on the basis of the papers. The applicant has provided responses to the examination reports, which the examiner has taken into account in his examination of the application, and which I will also consider in the course of my decision.

The invention

2 The apparatus consists of a series of tanks mounted in blocks of four. In the described embodiment multiple such units are mounted one above the other, and a number of such columns arranged side-by-side to give an array of units operating in concert. The details of the mechanisms are complex, but broadly consist of the tanks raising and falling vertically, with liquid filling each tank in turn, the full tank descending under gravity and lifting the next empty tank before itself draining into a reservoir supplying a subsequent module. The energy released by this movement drives a turbine, which in turn operates an alternator to produce electrical current.

The law

3 Section 1(1)(c) of the Act requires an invention to be capable of industrial application and section 14(3) requires that the disclosure to be clear enough and complete enough for the invention to be performed by a person skilled in the art. It is settled

law that devices which operate in a manner contrary to well established physical laws are not capable of industrial application because such devices cannot physically be made to operate in the way suggested. The description of such a device must also be regarded as being unclear and incomplete on the basis that the invention can never be performed by a person skilled in the art no matter how it is described in the specification of an application.

Analysis

4 The claims on file do not clearly define the matter of the invention, being almost entirely characterised by the result to be achieved rather than by any technical features of the apparatus ie the way in which it is achieved. My analysis will therefore consider the disclosure of the application as a whole, and whether there is any scope for an allowable claim set. If I find this to be the case then the application will need to be returned to the examiner for further work.

5 The examiner has reported that the invention as described would break the first law of thermodynamics, otherwise known as the Law of Conservation of Energy, by virtue of producing more energy than is supplied to the system. Specifically, it is not clear how the apparatus overall can produce more energy than is used by the electric pump such that the apparatus can serve as an electricity power plant. He argues that details such as the numbers of generators and mechanical advantage are irrelevant since the total energy produced (including any losses) is only equal to the input energy and cannot be greater as energy cannot be created.

6 In the first of his responses, the applicant enclosed a four-page summary of the invention which he suggested would assist the examiner. I have read these pages carefully. They consist of an outline of how the apparatus operates and a number of assertions regarding the potential output of the apparatus and the power input needed to achieve this. There is, however, no indication of how these figures are derived. The applicant's second response is somewhat sparser and makes assertions as to the performance of his invention, culminating in a claim that 'calculated gains are about 190:1'. Unfortunately, no details of this calculation are given and the application does not assist me.

7 I agree with the examiner's analysis of the apparatus. In a perfected efficient system, raising a quantity of liquid through a given height increases its potential energy by an amount equal to the energy used to raise it, and on flowing (or otherwise falling) back to its original height, only the same amount of energy may be converted from potential energy to any other form, including electricity. In practice, no process is 100% efficient, and so the apparatus must consume more power than it produces. Any other conclusion would require the first law of thermodynamics to be broken.

8 The description is careful to avoid any explicit statement that the energy output of the apparatus exceeds energy input. However, what is claimed is 'an assembly for producing electricity', clearly signalling that the device is a net-producer of energy, and throughout the description the reader is left in no doubt that this is the case. In short, it is impossible for the apparatus to function in the way described in the application and I can identify no allowable amendment.

Conclusion

9 The specification does not meet the requirements of section 14(3) because the invention cannot operate in the way described and cannot therefore be reproduced by a person skilled in the art. The invention contravenes the law of conservation of energy and is therefore incapable of industrial application as required by section 1(1)(c). I therefore refuse the application under section 18(3).

Appeal

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

MRS S E CHALMERS

Deputy Director, acting for the Comptroller