

## **PATENTS ACT 1977**

IN THE MATTER OF  
Patent Application 9423731.0  
in the name of Philip Frederick Stott

### **STATEMENT OF REASONS FOR DECISION**

1. These are the reasons for my decision of 21 May 1999 refusing this application.

#### **History of the application**

2. The application was filed on 24 November 1994 and a F9/77 requesting preliminary examination and search was filed on 22 November 1995. The search report was issued on 28 December 1995, and listed a single document which was categorised as indicating lack of novelty or inventive step. Following publication of the application on 16 October 1996 a request for substantive examination was filed on 16 April 1997, and the first report under section 18(3) was issued on 26 January 1998. In his report the examiner objected that the invention was not patentable because the manner in which it was alleged to work was contrary to known natural (Newton's) laws and the invention was thus not capable of industrial application as required by sections 1(1)(c) and 4(1) of the Patents Act 1977. The report also raised objection that the invention as it was defined in claims 1,3 and 5 was not new in light of the disclosure of prior published patent GB 1535174 ("GREED"), and that the invention of claim 2 was lacking in inventive step. In his letter of 25 August 1998 Mr Stott said that his invention "does not work contrary to known natural laws" and rejected the examiner's view that the invention was not capable of industrial application. The letter was accompanied by photographs of an experimental apparatus and some data obtained from the apparatus, which Mr Stott said demonstrated the generation of a reaction force.

3. There followed an exchange of correspondence in which the examiner maintained his position, reiterating and explaining his original objections in greater detail, and commenting on the experiments shown in the papers provided by Mr Stott. Mr Stott continued to maintain that his invention was capable of industrial application. At no point

in this exchange did Mr Stott address the issues of novelty and obviousness raised by the examiner. In his letter of 28 April 1999 Mr Stott requested a hearing to resolve the issues, and the hearing was held before me on 20 May 1999. Mr Stott appeared in person, and the examiner, Mr Michael Walker attended for the Office. No amendments having been filed, the application in its originally filed form formed the basis for discussion at the hearing.

### **The invention**

4. The invention is described as a gyroscopic reactive propulsion unit. There are two embodiments of the invention. In both of these an electrically rotatable platform supports a number of gyroscopes which are themselves electrically driven. The platform in each case rotates at right angles to the axial plane of the gyroscopes. The specification (page 2 paragraphs 4,5 and page 3 paragraph 2,3) states that, for each embodiment:-

*"When a suitable rpm is for the gyroscopes and the rotating platform is reached, a reaction is produced at right angles to the gyroscopic platform.*

*With the appropriate power to weight ratio this reaction produces momentum in an upwards direction as shown in the Fig 1 (Fig 2) drawings."*

The unit of the second embodiment includes refinements such as linear motors to drive the platform, magnetic bearings for the gyroscopes, and an outer case which is sealed and acts as a vacuum chamber for the unit. All of the means for providing electrical power to the platform and gyroscopes are provided within this chamber.

5. The claims of the application read as follows:-

1. *A gyroscopic reactive propulsion unit comprising a number of gyroscopes, all inclined within the same plane, each powered by electric means, attached to a circular platform, which itself is made to rotate under power at right-angles to the axial plane of the gyroscopes, means of providing electrical current to all gyroscopes and rotating platform, and which can be fixed or variable to facilitate high degree of control in both axial planes.*

2. *A gyroscopic reactive propulsion unit as claimed in Claim 1 wherein means are provided to reduce friction, drag and vibration.*
3. *A gyroscopic reactive propulsion unit as claimed in Claim 1 or Claim 2, wherein the means of motivity and stability are provided by electrical, mechanical, electromechanical, magnetic, electro-magnetic processes.*
4. *A gyroscopic reactive propulsion unit as claimed in Claim 3, wherein the motivity and stability is provided by linear motors.*
5. *A gyroscopic reactive propulsion unit as claimed in Claim 1 or Claim 2 or Claim 3, where the means is provided for enclosing or containing the unit, and for attaching the unit to a vehicle, and for directing or steering the unit.*
6. *A gyroscopic reactive propulsion unit substantially as described herein with references to Figures 1 - 2 of the accompanying drawings.*

#### **Mr Stott's experimental apparatus**

6. Earlier I mentioned that Mr Stott had submitted some papers showing an apparatus which he said could demonstrate the reaction force generated when a spinning gyroscope is itself forced to rotate in a horizontal plane at right angles to the axis of rotation of the gyroscope. At the hearing I was shown a video recording of Mr Stott's apparatus, in which a counterbalanced electrically driven gyroscope is mounted on an arm pivoted to a vertical support. On rotation of the vertical support about a vertical axis, with the gyroscope itself rotating, the arm bearing the gyroscope pivoted upwardly. A spring balance was attached to the arm which Mr Stott said indicated the upward reaction force in grams. On operation, the apparatus appeared to provide a demonstration of what would be expected to happen to a pivotally mounted rotating gyroscope in response to an applied torque. On discussion at the hearing it was established that this apparatus differed from the invention in that it had a single driven gyroscope mounted on a pivoted arm, whilst the invention had a plurality of fixedly mounted gyroscopes. As I understood him, Mr Stott

said that in his invention, where the gyroscopes are fixed, the observed upward movement of the pivoted gyroscope in the experimental apparatus would appear as a force which would be translated through the unit to the supporting platform and could be utilised as a lifting force.

### **The relevant sections of the Act**

7. Section 1(1) reads

"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) ....."

Section 4(1) reads

"....., 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."

### **The issues**

#### Not capable of industrial application

8. Both at the hearing, and in his reports issued previously, the examiner argued that the invention could not be regarded as capable of industrial application: in his view the manner in which it was alleged to operate contravened natural laws. In particular, he referred to Newton's First Law of Motion - a body will continue in a state of rest or uniform motion unless it is compelled by a force to change its state of rest or uniform

motion. The invention as described would not be capable of producing an external lifting or propulsive force. Because the gyroscopes in the invention are fixedly mounted on the platform, they would not be able to move upwardly but would be subjected to a forced precession which would induce an internal couple that would act against the platform. No force external to the unit would be produced that could act to move the unit against gravity. In the examiner's view the invention would not work and was thus not capable of industrial application.

9. Mr Stott replied that he did not agree that his invention worked in a way that was contrary to natural laws, and that he was not saying that his invention went against current science. However, as I understood him, he thought that his invention went further than Newton's laws and could be explained within Einstein's theory of special relativity. He also said that, whilst he would not argue that the invention was capable of producing a propulsive force, he remained of the view that the forces produced could be transferred through the unit to provide a lifting force that could act outside of the unit.

10. I have carefully considered Mr Stott's arguments, and also what I have seen of his earlier experimental apparatus. Whilst the latter shows an interesting demonstration of the forces that can be generated in a system using gyroscopes, these forces are nevertheless explainable mathematically and within Newtonian physics. As noted above, the invention is constructed differently from the apparatus in the video recording. I do not therefore think that I need to consider the working of the experimental apparatus in reaching a decision on the industrial applicability of the invention described in the application. Both embodiments of the invention as described are self contained units. In particular, the second embodiment is described as having an outer casing which can provide a vacuum chamber to house the internal parts of the unit. I cannot see how in these described embodiments a force external to the units could be generated. The effects of the gyroscopes within the unit will produce an internal couple, as the examiner says. I have some difficulty with Mr Stott's contention that these internal gyroscopic effects will be translated through the unit to produce an external force that could be harnessed to produce a lifting effect outside the unit. If the invention were to work as described, it would clearly

violate well established natural laws. I therefore agree with the examiner that the invention does not comply with section 1(1)(c) of the Act because it does not fall within the definition of industrial applicability set out in section 4(1).

#### Novelty of claim 1

11. It could be argued that this issue no longer needs to be considered, in view of the conclusion that the invention is inherently not patentable. However, as this issue was discussed in some detail at the hearing I will address it here.

12. The prior patent, GB 1535174 ("GREED") is concerned with a gyroscopic device including a number of gyroscopes which can be mounted on a disc (page 1 line 90 to page 2 line 16 and lines 76-8, and figure 4). The operation of these gyroscopes as described appears to be similar to that of Mr Stott's invention as defined in his claim 1. Claim 1 also requires "electric means" to power the gyroscopes and platform, although the references in claim 3 to the use of mechanical processes throws some doubt on this. As I understood Mr Stott at the hearing, he conceded that the whilst the use of electric means to power his unit would be the first choice, the means could also be a mechanical device. Whilst the text of GREED is silent on the means to power the device, simply referring to the use of any driving force known to those practised in the art, the examiner argued that the spacecraft shown in the figure clearly included solar panels, which of necessity would power an electric motor. Finally on this issue, Mr Stott argued at the hearing that the GREED arrangement would not provide the necessary degree of control, not having a platform which is "fixed or variable to facilitate a high degree of control in both axial planes", as required by his claim 1. The examiner argued in response that insofar as this wording could be understood it simply presented alternatives and thus did not exert any restricting effect on the claim.

13. It is true to say that claim 1 is to some extent unclear as to the precise scope and construction of the invention. However, having considered the examiner's arguments, and Mr Stott's response, I take the view that, as far as I can construe the meaning of the claim,

it is anticipated by the disclosure of GREED. The invention as presented in claim 1 therefore fails to comply with the requirement of Section 1(1)(a).

### **Possibility of amendment**

14. In the decision of 21 May 1999 I said that, even if amendment could be made to remove any failures under sections 1(1)(a) and (b), I could not envisage a form of amendment that would be allowable and would meet the objections under 1(1)(c) and 4(1). I reached this view having carefully considered the whole specification, and Mr Stott's submissions both at the hearing and in the correspondence: I do not believe that any of his submissions alter that view.

### **Summary**

15. The decision of 21 May 1999 refused the present application, and as foreshadowed in that decision, this statement has set out my reasons for doing so. The 6 weeks allowed for appeal against the decision runs from that date of the decision, that is from 21 May 1999.

Dated this 28th day of May 1999

**PAT EVERETT**

Deputy Director, acting for the Comptroller

**PATENT OFFICE**