

COMMISSIONER'S DECISION

Section 36(2) Claims not defining the invention: Shaft Seal for Rankine Cycle Engine

The claims were refused for failing to include all the necessary elements of the invention. At the Hearing the applicant proposed amendments which overcame the rejection.

Rejection modified.

The Final Rejection of application number 143170 (Cl. 277/20.1) of Thomas LeFeuvre et al, assigned to the Thermo Electron Corporation, was referred to the Patent Appeal Board for consideration. A Hearing was conducted on March 16, 1977, at which Mr. W.D. Parks and Mr. J. Neal represented the applicant.

The invention is a shaft seal for Rankine cycle engines. The examiner had made two objections related to Section 38 (Division) and to claim dependency, both of which were overcome by amendments proposed with the response of December 24, 1975. While the remaining objection brought in the question of obviousness in view of certain prior art, the main thrust of the objection was that the proposed claims failed to specify that the pressure of the buffer fluid is constantly adjusted automatically to prevent both egress and ingress of contaminants and oil past the shaft seal.

At the commencement of the Hearing Mr. Parks stated that he wished to propose another amendment which he believed would fully overcome the rejection. He explained that the nature of the rejection had not been fully appreciated until he and Mr. Neil were preparing for the Hearing, and they were quite willing to make an additional amendment which he believed would satisfy both the examiner and the Board. The new claim 1 which he proposed is as follows:

A Rankine cycle system comprising:

(a) an expander having a casing part;

(b) a rotary shaft extending from said casing part into [the] atmosphere, the pressure in said casing part rising above atmospheric pressure during certain conditions and dropping below atmospheric pressure during certain other conditions;

(c) a first sealing means mounted on said shaft in fixed, fluid tight relationship and having first and second sealing surface areas surrounding said shaft;

(d) second sealing means mounted in fixed, fluid tight relationship to said casing part and having first and second sealing surface areas in sealing engagement with said first and second sealing surface areas, respectively, of said first sealing means;

(e) means forming a buffer fluid compartment in communication with said first and second sealing means at their points of engagement for maintaining a supply of buffer fluid at said points of engagement; and

(f) means responsive to both the pressure in said casing part and the atmospheric pressure for constantly applying pressure to buffer fluid within said compartment which at least equals the greater of either the pressure in said casing part or the atmospheric pressure, during all conditions, to thereby eliminate the tendency of material to pass along said shaft from said casing part into said atmosphere and from said atmosphere into said casing part.

The portion of the claim underlined is the addition which he felt would overcome the rejection.

The examiner and the Board reviewed the proposed amendment at the Hearing, and found that it was to be satisfactory. Since the remaining claims are dependent on claim 1, they too will be acceptable.

The Board consequently recommends that the proposed amendment be accepted, and the application returned to the examiner to resume prosecution.

Mr. Parks stated that he would also like to reintroduce some of the claims previously cancelled, as the proposed amendment would, in his view, also overcome some of the earlier reasons for applying Section 38. We are satisfied that that is a matter which should be considered by the

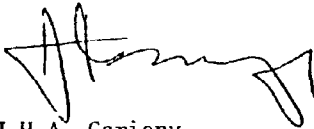
examiner when examination is resumed.

It is regrettable that Mr. Parks had not come forward with his proposals before the Hearing. However, an agent's lot is not always easy, and we are content that a resolution satisfactory to all was reached even at this late stage.



Gordon Asher  
Chairman  
Patent Appeal Board

Having considered the amendment proposed by the applicant, I direct that it be entered, and prosecution be resumed.



J.H.A. Gariepy  
Commissioner of Patents

Dated at Hull, Quebec

this 18th day of March, 1977

Agent for Applicant

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