

COMMISSIONER'S DECISION

DIVISION - S. 38: Seal for Rotary Shaft

Two independent claims are directed to the known principle of pumping oil to prevent leakage but they do not meet the need in the same way. They cover separate inventions.

Rejection: Affirmed

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated January 10, 1975, on application 139,008 (Class 277-20.5). The application was filed on April 6, 1972, in the name of James D. McHugh and is entitled "Self-Pressurizing Seal For Rotary Shafts."

In the prosecution terminated by a Final Rejection, the examiner has refused to let the application proceed until the applicant limits his claims to one invention. It is his position that two inventions are claimed, and that objection must be made under Section 38 of the Patent Act.

The invention is a shaft seal for submersible motors. This seal comprises a tandem arrangement of an inboard seal which is capable of pumping sealing fluid to an outboard seal.

The Final Action stated (in part):

The claims stand rejected under the unity of invention objection made in the previous Official Actions. In each Official Action it was pointed out that claim 1 differs from claim 7 i.e. these independent claims fail the "infringement test". Applicant alleges that claim 1 is the broadest claim. However claim 1 is not "infringed" by claim 7. There is no specific limitation of viscosity grooves extending from the peripheral edge of the member and terminating in a land along a planar face. Claim 7 recites a spiral grooved face seal. The face seal means outboard of the pumping seal is composed of conventional elements, a rotary member and a stationary member. However claim 1 recites

a pressure actuated member comprising the means for driving the inboard face seal means into mutual contact whereas claim 7 recites a pressure responsive face seal means. Additionally claim 7 recited biasing means for the inboard seal and a notched shoulder of the axially slidable member. Therefore claim 7 is not broader than any other claim in the application. Since there is no claim broader in scope than all other claims in the application it is deemed that Section 38(1) is not satisfied. (see Manual of Patent Office Practice 10.02).

The applicant in his response dated April 8, 1975 stated (in part):

In the "Final Action" the Examiner states, "Since there is no claim broader in scope than all other claims in the application it is deemed that Section 38(1) is not satisfied." With this statement, the Examiner appears to be saying that since there is no claim that is broader in scope than all other claims in the application, the claims must be directed to more than one invention.

It is appreciated that this is no doubt a standard "test" applied by the Patent Office to facilitate the processing of applications and it no doubt is sufficient in a good many cases. It is not seen, however, that such a test is applicable in each and every instance - the present application, currently under discussion, being one example of an application that is not susceptible to such a test.

One can readily imagine an application which has claims constructed so as to pass the "test" that there is one claim "broader in scope than all other claims in the application". No doubt the vast majority of Canadian patents contain claims that are constructed in just such a fashion. However, if one were to delete that broadest claim, from a set of claims that have passed the "test", it is extremely difficult to fathom how such a change results in the claims being directed to more than one invention. No doubt the claims would no longer fit into the niche that the Patent Office has prepared for them, but surely they do not change from defining a single invention to defining a plurality of inventions.

Furthermore, it is not at all apparent how the Examiner arrived at such a "test" or criterion for unity of invention. The nearest thing to this "test" as found in the Patent Act or Rules would appear to be Rule 60(1) of the Patent Rules. Rule 60(1) of the Patent Rules states in part that, "...an application that does not contain a claim broader in its scope than any other claim in the application shall be deemed to be directed to more than one invention." It is not entirely clear exactly what is meant by this rule since any set of claims having an independent and a dependent claim would appear to meet this requirement.

While Rule 60(1) of the Patent Rules does not appear to give a clear definition of unity of invention it is not seen how the Examiner's definition, which includes the words "claim broader in scope than all other claims" gives a more accurate or explicit definition, let alone one based upon statutory law.

The Patent Act clearly allows for multiple claims in a single patent application, and if there is to be any benefit derived from more than one claim, the claims must differ materially from one another. The Applicant's Agent has the onus of drafting claims which not only clearly describe the invention but which afford the proper protection (i.e. not claiming too much and not claiming too little) while complying with the appropriate legal requirement. That this is not an easy onus to discharge is readily witnessed by the large number of patent cases which result in court proceedings.

Claim 1 reads:

A shaft seal for a rotatable machine to inhibit ingress of ambient fluid into said machine, said seal comprising an inboard pumping seal characterized by an annular running member mounted upon a rotatable shaft in juxtaposition with an annular stationary member disposed in a confronting attitude relative to said running member, at least one of said juxtaposed members having viscosity grooves therein extending from a peripheral edge of said member and terminating in a land along a planar face of the member to pump sealing fluid contained within said machine into a relatively confined zone to substantially increase the pressure of said sealing fluid within said zone relative to the sealing fluid pressure within said machine, and face seal means axially mounted upon said shaft at an outboard location relative to said inboard seal to restrict the out flow of sealing fluid from said confined zone, said face seal means including a rotary member axially mounted upon said rotatable shaft, a stationary member juxtaposed in a co-planar attitude relative to said rotary member, and means including a pressure actuated member for driving said rotary and stationary members toward mutual contact.

Claim 7 reads:

A shaft seal for a rotatable machine to inhibit ingress of ambient fluid into said machine, said seal comprising a spiral grooved face seal disposed at an inboard location along said shaft for pumping sealing fluid from said machine into a substantially confined zone to increase the sealing fluid pressure within said machine, said spiral grooved face seal comprising coaxial rotary and stationary members juxtaposed in a co-planar attitude, at least one of said members being axially slidable along said shaft to vary the span between said members, mechanical means biasing said axially slidable member toward said stationary member, a shoulder notched within said axially slidable member face remote from said stationary member, said shoulder being in communication with the sealing fluid of said confined zone to bias said axially slidable member towards said stationary member of said spiral grooved face seal with increased sealing fluid pressure in said confined zone, and pressure responsive face seal means disposed at an axially outboard location upon said rotatable shaft and operable in response to increased fluid pressure in said confined zone to restrict the flow of sealing fluid from said confined zone.

The question to be determined is whether the claims are directed to more than one invention.

In his response the applicant states that it is "not at all apparent how the examiner arrived at the criterion for unity of invention. The Final Action refers to Chapter 10.02 of the Manual of Patent Office Practice which outlines the relationship between Section 38 and Rules 58, 59, and 60. Additional guidance to the practice used in this area can be found in Section 10.07.01 and 10.07.02 of the manual.

We agree with the applicant that the Patent Act allows for multiple claims in a single patent application. While it is correct that multiple claims are allowable in one application, it is still necessary that they be directed to the same inventive concept.

Claim 1 states that the inboard seal comprises an annular running member juxtaposed with an annular stationary member, one of these members terminating in a land to pump sealing fluid to a confined zone. This is combined with an outboard face seal comprising a rotary member mounted on a rotatable shaft, a stationary member juxtaposed in co-planar attitude relative to the rotary member and means to pressure actuate these two members toward mutual contact.

Claim 7 for its part is directed to a spiral grooved face seal disposed at an inboard location in which the spiral grooved face seal comprises coaxial rotary and stationary members. One of these members is biased axially by mechanical means which is assisted by hydraulic force arrangement. The outboard seal is indicated as a "pressure responsive seal means."

In considering the difference between claim 1 and claim 7 it is observed that claim 1 is readable on the sealing means shown in figure 1, whereas claim 7 is readable on the device shown in figure 3. Claim 1 details that the viscosity grooves terminate in a land along a planar face of a

member, while claim 7 only specifies the use of a spiral grooved face seal. Further, claim 1 indicates the construction of the outboard seal as having a rotary member, a stationary member in juxtaposed co-planar attitude, with means to force the two members toward mutual contact. Claim 7 only states that the outboard seal is a pressure-responsive face seal operable in response to increased fluid pressure. In addition, claim 7 details that one of the inboard seal members is biased by both mechanical and hydraulic means, whereas claim 1 only states that the two members are mounted on a rotatable shaft in juxtaposition to each other.

Essential components in claim 1 are an inboard seal of juxtaposed annular running member and stationary members having viscosity grooves terminating in a land combined with an outboard face seal means comprising a rotary member, a stationary member coupled with means to press these two members in mutual contact. In claim 7 essential features are an inboard spiral grooved seal of coaxial stationary and rotary juxtaposed members, biased mechanically, and hydraulically which is combined with an outboard face seal stated as a pressure responsive seal means.

According to the disclosure the principle of using the rotary speed of the shaft to pump oil for restricting leakage from the pump is known. The manner in which claim 1 solves the problem of leakage is not the same as in claim 7. If the claims were directed to a single invention the method of solving the problem would be the same in each case. In our opinion the description of the essential features of the invention in claim 1 cannot be considered to be the same invention as that covered by claim 7.

The applicant argues that his application is not susceptible to the "test" that one claim must be "broader in scope than all other claims in the application". He elaborates that if one were to delete the broadest claim from

a set of claims that have passed the "test" it would be difficult to "fathom how such a change results in the claims being directed to more than one invention". We agree that an applicant may describe and claim more than one embodiment of an invention. In this application the disclosure on page 1 indicates that the principle of pumping oil to provide a seal is known. Both claims are directed to this principle. As envisaged by the device of claim 1 the inventive concept relates to a pump having a land terminating the viscosity grooves on the inboard seal. In claim 7 the invention defined depends upon the rotary and stationary members of a spiral grooved seal inboard pump being biased mechanically and hydraulically. While both claims are directed to the broad principle of pumping oil to prevent leakage, they do not meet that need in the same way.

We recommend that the application be refused under Section 42 in that the applicant fails to limit his claims to one invention when required to do so under Section 38.



G. Asher
Chairman
Patent Appeal Board

I concur with the findings of the Patent Appeal Board. The applicant has six months in which to appeal under Section 44, or to limit the claims to one invention.



J.A. Brown
Acting Commissioner of Patents

Dated at Hull, Quebec
this 5th day of December, 1975

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