

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN S. HIGHAM and RHYS K. ADSIT

Appeal No. 1999-1773
Application 08/497,858

ON BRIEF

Before SMITH, JERRY, RUGGIERO and BARRY, Administrative Patent Judges.

SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 2-4, 6 and 8-10, which constitute all the claims remaining in the application.

The disclosed invention pertains to a method and apparatus for reducing short-term transients, such as due to roll momentum unloads, in a spacecraft having a nutation compensator operating under a polynomial transfer function.

Representative claim 8 is reproduced as follows:

8. Apparatus for reducing short-term transients, such as due to roll momentum unloads, in a spacecraft having a nutation compensator with a polynomial transfer function,

$$\frac{a_{n-1} s^{n-1} + a_{n-2} s^{n-2} + \dots + a_0}{s^n + d_{n-1} s^{n-1} + d_{n-2} s^{n-2} + \dots + d_0}$$

comprising:

means for resetting one of the states of the polynomial in proportion to the expected roll momentum unload and producing a signal indicative thereof; and

means, responsive to said indicative signal, for producing an equal and opposite transient to damp out the transient due to roll unload.

The examiner does not rely on any references.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the arguments relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's

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rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the specification adequately supports the invention which is now recited in claims 2-4, 6 and 8-10. Accordingly, we reverse.

Appellants have indicated that for purposes of this appeal the claims will all stand or fall together as a single group [brief, page 10]. Consistent with this indication appellants have made no separate arguments with respect to any of the claims on appeal. Accordingly, all the claims before us will stand or fall together. Note In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). Therefore, we will consider the rejection against independent claim 8 as representative of all the claims on appeal.

Claims 2-4, 6 and 8-10 stand rejected under 35 U.S.C. § 112, first paragraph, as "containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." These claims were also rejected as "containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention" [final rejection, page 2, which was

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incorporated into the answer]. Thus, the rejection invokes both the written description requirement and the enablement requirement of 35 U.S.C. § 112.

We consider first the rejection as it relates to the written description requirement. The purpose of the written description requirement is to ensure that the applicants convey with reasonable clarity to those skilled in the art that they were in possession of the invention as of the filing date of the application. For the purposes of the written description requirement, the invention is "whatever is now claimed." Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1564, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991).

This portion of the examiner's rejection is apparently based on the failure of the specification to set forth the polynomial transfer function although this transfer function is set forth in the drawings as originally filed. For purposes of the written description requirement, the appropriate question is whether the originally filed application supports the invention now being claimed. We find that it does. The originally filed application clearly supports the claimed polynomial transfer function as well as the claimed means for resetting and means for producing. Each of these elements of the claims is described to the extent claimed in the original application. Therefore, the original application provides adequate support that appellants were in possession of the claimed invention at the time that this application was filed.

We now consider the rejection as it relates to the enablement requirement. To

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comply with the enablement clause of the first paragraph of 35 U.S.C. § 112, the disclosure must provide an adequate description such that the artisan could practice the claimed invention without undue experimentation. In re Scarbrough, 500 F.2d 560, 566, 182 USPQ 298, 303 (CCPA 1974); In re Brandstadter, 484 F.2d 1395, 1407, 179 USPQ 286, 295 (CCPA 1973). Enablement is not precluded by the necessity for some experimentation. However, experimentation needed to practice the invention must not be undue experimentation. The key word is "undue", not "experimentation." In re Wands, 858 F.2d 731, 736-37, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). The burden is initially upon the examiner to establish a reasonable basis for questioning the sufficiency of the disclosure. In re Strahilevitz, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982). The PTO has the burden of giving reasons, supported by the record as a whole, why the specification is not enabling. Showing that the disclosure entails undue experimentation is part of the PTO's initial burden. In re Angstadt, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976).

The examiner finds lack of enablement by asserting that the specification does not indicate how the polynomial transfer function was derived and what its variables represent. The examiner also asserts that the functionality of the resetting means is not disclosed, and the "s" in the transfer function is not defined nor is the means for changing this value clearly defined. Appellants argue that the artisan would have had the requisite knowledge

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to understand how to make and use the invention with or without the cited background information. Appellants filed a declaration by one of the co-inventors to this effect.

Appellants argue that the examiner has never explained why he does not understand the invention nor has the examiner explained why the statements of the declaration were not true.

We agree with appellants on this point. The examiner has not satisfied his burden of establishing that undue experimentation would be required. One must first identify who the person skilled in the relevant art is. It turns out that in order to understand the claimed invention, you actually do have to be a rocket scientist. Thus, this application is directed to people who are skilled in the art of launching and controlling satellites, that is, rocket scientists. We have no doubt that rocket scientists are familiar with the fact that satellites contain nutation compensators which operate according to some polynomial transfer function. All controls can be formulated as transfer functions. We do not understand why the examiner questions how the transfer function was derived or what the variables mean. The transfer function is written in the form of the Laplace Transform, which is conventionally used in the control art. The examiner has failed to convince us that it would require undue experimentation to reset one of the states of the polynomial to produce an equal and opposite transient to damp out the transient due to roll unload.

We also find that the examiner has failed to give proper consideration to the

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declaration filed on behalf of appellants. The declarant sets forth the high level of knowledge and skill of persons working in this art, and the examiner has given no reasons why the statements of the declaration should be doubted or considered as untrue.

In summary, we have considered the examiner's rejection under both the written description requirement and the enablement requirement of 35 U.S.C. § 112. We have found that the claimed invention clearly has written description support in the original application. We have also found that the examiner has failed to establish that it would require undue experimentation to make and use the claimed invention. Accordingly, the decision of the examiner rejecting claims 2-4, 6 and 8-10 under 35 U.S.C. § 112 is reversed.

REVERSED

JERRY SMITH)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
JOSEPH F. RUGGIERO)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
)	
)	
LANCE LEONARD BARRY)	
Administrative Patent Judge)	

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