

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ROLAND BARTH

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Appeal No. 1998-0982  
Application No. 08/399,715<sup>1</sup>

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HEARD: November 3, 1999

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Before McCANDLISH, Senior Administrative Patent Judge,  
FRANKFORT, and McQUADE, Administrative Patent Judges.

McCANDLISH, Senior Administrative Patent Judge.

DECISION ON APPEAL

AND

REMAND TO THE EXAMINER

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<sup>1</sup> Application for patent filed March 3, 1995.

This is a decision on an appeal from the examiner's final rejection of claims 1 through 20.<sup>2</sup> No other claims are pending in the application.

Appellant's invention relates to "an arrangement for the relative adjustment of the rotation angle of a control shaft [2] with respect to a driving wheel [4], particularly for an internal combustion engine" (specification, page 1). An element (10) having one set of teeth engaging teeth on the driving wheel (4) and another set of teeth engaging teeth on a part (8) fixed to the control shaft (2) is axially displaceable to angularly adjust the driving wheel with respect to the control shaft. In the illustrated embodiment, the control shaft has a flange (11) disposed on one side of the driving wheel to act as a stop for limiting axial movement of the driving wheel in one direction. On the other side of the driving wheel there is a stop ring (12), a prestressed diaphragm spring (15) and a wear ring (16). The wear ring seats against a side face of the driving wheel, and the diaphragm spring is confined between the stop ring and the wear

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<sup>2</sup> Claim 1 has been amended subsequent to the final rejection.

ring. With this arrangement, the diaphragm spring exerts a biasing force to establish engagement between the driving wheel and the stop flange (11) on the control shaft.

According to claim 1, the only independent claim on appeal, the diaphragm spring has "a characteristic curve whose shape is relatively negative and substantially constant along a maximal movement path of the predetermined operating range."

A copy of the appealed claims is appended to appellant's brief.

The following reference is relied upon by the examiner as evidence of obviousness in support of her rejection under 35 U.S.C. § 103:

German Patent	DE 42 33 250	Jan. 20, 1994
Barth et al. (Barth) <sup>3</sup>		

Claims 1 through 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Barth. The examiner concedes that Barth lacks a disclosure of the claimed negative spring characteristic. She nevertheless concludes:

It would have been obvious to one of ordinary skill in the art, as determined through routine

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<sup>3</sup> Translation attached.

experimentation and optimization, to provide a spring having the characteristics which are claimed because since it is well known that one of skill in the art would routinely experiment to choose a spring which would best allow for the characteristics which are required of the shaft.

To the extent that the language in appealed claim 1 is understandable, we cannot sustain the standing § 103 rejection. Admittedly, there are cases which have held that "optimization" may not in itself patentably distinguish the claimed subject matter over the prior art. However, in all of the authorities known to us, the optimization relates to a range or a variable. See, for example, In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) (The discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art and, hence, obvious.).

In the case at bar, appellant's claimed diaphragm spring is required to be structurally different from Barth's diaphragm spring in order to provide the negative slope characteristic. Thus, in the present case, patentability of appellant's claimed invention is predicated on a difference in structure, and not on a change in a variable. The rule in Boesch therefore is not applicable to the present case, especially in view of the fact

that the examiner has not cited any authority for extending the Boesch principle concerning changes in a variable to a situation in which an apparatus has been structurally modified to achieve a certain result.

The examiner's decision rejecting appealed claims 1 through 20 is therefore reversed.

This application is herewith remanded to the examiner to review the claimed subject matter for compliance (a) with the description requirement in the first paragraph of 35 U.S.C. § 112 and (b) with the second paragraph of 35 U.S.C. § 112.

With regard to the first paragraph of § 112, certain limitations in claim 1 appear to lack descriptive support in the original specification, the original claims or the original drawings. In particular, appellant's application as filed lacks descriptive support for the recitation in claim 1 that the axial stops (in the plural) are "frictionally engageable with the driving wheel." Of the two axial stops described in the original specification and shown in the original drawings, namely the control shaft flange 11 and the stop ring 12, only

the control shaft flange is engageable<sup>4</sup> with the driving wheel. Furthermore, appellant's application as filed appears to lack descriptive support for the recitation in claim 1 that diaphragm spring has an operating range "to move at least one of the axial stops into frictional engagement with the driving wheel, . . ."

With regard to the second paragraph of § 112, the examiner's attention is directed to the recitation in claim 1 that the shape of spring's characteristic curve is "relatively negative and substantially constant along a maximal movement path of the predetermined operating range" (emphasis added). It is unclear what is meant by the recitation that the movement path (which we understand to be the spring's deflection path) is "maximal." Furthermore, the word "substantially" is a term of degree. Appellant's specification, however, appears to lack any guidelines or standards for measuring that degree as required in Seattle Box Co. v. Industrial Crating & Packing Inc., 731 F.2d 818, 826, 221 USPQ 568, 574 (Fed. Cir. 1984).

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<sup>4</sup> According to its applicable dictionary definition (see Webster's Third New International Dictionary (G. & C. Merriam Company, 1971)), the word "engage" means to "come into contact with."

REVERSED AND REMANDED

HARRISON E. McCANDLISH	)	
Senior Administrative Patent Judge	)	
)	)	
	)	
	)	
	)	BOARD OF PATENT
CHARLES E. FRANKFORT	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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	)	
JOHN P. McQUADE	)	
Administrative Patent Judge	)	

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