

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* ODDBJORN HALLENSTVEDT

---

Appeal No. 99-0214  
Application No. 08/372,126<sup>1</sup>

---

ON BRIEF

---

Before CALVERT, ABRAMS, and McQUADE, *Administrative Patent Judges*.

ABRAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the decision of the examiner finally rejecting claims 5-18, which constitute all of the claims remaining of record in the application.

---

<sup>1</sup> Application for patent filed January 13, 1995.

The appellant's invention is directed to the combination of a seat for a sealing ring and a sealing ring seated in the seat (claims 8-14), and to a seat for a sealing ring (claims 15-18). The claims on appeal have been reproduced in an appendix to the Brief.

**THE REFERENCE**

Kondoh *et al.* (Kondoh)                      4,776,768                      Oct. 11,  
1988

**THE REJECTION**

Claims 5-18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kondoh.

The rejection is explained in Paper No. 17 (the final rejection).

The opposing viewpoints of the appellant are set forth in the Brief.

**OPINION**

The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in

the art. See, for example, **In re Keller**, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a *prima facie* case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See **Ex parte Clapp**, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, **Uniroyal, Inc. V. Rudkin-Wiley Corp.**, 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1052 (Fed. Cir.), *cert. denied*, 488 U.S. 825 (1988).

The appellant's invention is directed to a seat for an elastic sealing ring of the type used to seal around a rotating shaft. The invention provides an annular groove into which a portion of the elastic seal (a bead) is displaced when the seal is pressed into position. From the description in the specification, there appear to be five features of the

invention. The first of these is forming a sharp edge or corner (22) where the groove intersects with the inner seat defining surface (5), which prevents the seal from moving in that direction by interacting with the bead that extends into the groove. This clearly is taught by Kondoh, and is not an issue in the case. The second feature is inclining the wall (24) of the annular groove opposite the edge at an angle of "about" fifteen degrees relative to the seat defining surface (5), which "provides the least possible resistance to pressing the sealing ring into the seat" (page 2). A "gentle transition" of the inclined wall (24) relative to the seat defining surface (5) is another feature of the invention. The final two features are that the axial extent of the groove is "approximately 20-30%" of the axial length of the seat defining surface (5), and the depth of the annular groove is "approximately 5-7%" of the axial length of the seat defining surface (5).

Kondoh discloses means for sealing around a rotating shaft which, as shown in Figure 10, comprises a pair of axially spaced grooves (223) and an elastic sealing ring. As is the case in the appellant's invention, the sealing ring is pressed

into place, whereupon a sharp edge (294) in each groove engages the a bulge in the sealing ring to hold it in position. Each of Kondoh's grooves has a first surface perpendicular to the seat defining surface and a second surface that appears from the drawing to be at about a 45 degree angle thereto, although no specific information on this point is set forth in the written description. Nor is information provided regarding the length or depth of the grooves.

We agree with the examiner that all of the subject matter recited in claim 5 is disclosed by Kondoh, except for the requirement that the inclined groove wall be at an angle of "about" fifteen degrees. However, we do not agree with the examiner that "this is a mere difference in degree from that shown by Kondoh and, therefore, would have been obvious" (Paper No. 17, page 2). Our conclusion is grounded in the fact that the appellant has established in the specification that this limitation is critical in that it "provides the least possible resistance" to pressing the sealing ring into place.

Considering that the angle of the comparable groove wall in Kondoh appears to be about three times the claimed value, and that Kondoh evidences no concern for the problem solved by this

feature of the appellant's invention, it is our view that the teachings of the reference fail to establish a *prima facie* case of obviousness with regard to the subject matter recited in claim 5. Moreover, the examiner has not pointed out, and we fail to perceive on our own, any teaching, suggestion or incentive which would have led one of ordinary skill in the art to modify the Kondoh grooves so that this particular wall is inclined at an angle of about fifteen degrees.

For the reasons set forth above, we will not sustain the rejection of claim 5 or claims 6-11, which depend therefrom.

The same rationale applies to independent claim 15, which is directed to a seat for an elastic sealing ring and which requires, *inter alia*, that the axial extent of the annular groove in the seat be "approximately 20-30%" of the length the internal lateral surface of the sealing ring. The specification establishes that this is a critical value, for it is a factor in making milling the groove very simple with a minimum of material waste (page 2). Kondoh is silent here as to the problem solved by this particular measurement, and provides no hint as to the size relationship of the groove to

the length of the sealing ring in the patented invention, and therefore one is left only to analyze the showing in the drawing. We find ourselves in agreement with the appellant that even considering the drawings in the most favorable light, the axial extent of the each of the grooves does not comply with the terms of the claim. In this regard, we note that the common meaning of "approximately" is "to come near,"<sup>2</sup> which in our view is not the case with regard to the axial extent of the Kondoh groove.

Therefore, a *prima facie* case of obviousness also is not established with respect to the subject matter of independent claim 15 or of claims dependent claim 16-18. The rejection of claims 15-18 is not sustained.

We reach the opposite conclusion with regard to independent claim 12, however. This claim contains neither of the numerical limitations discussed above, and the point at issue is the requirement "said inclined side [24] smoothly transitioning to said internal lateral surface [5]." The appellant has not explained where in the specification guidance

---

<sup>2</sup> See, for example, Merriam Webster's Collegiate Dictionary, Tenth Edition, 1996, page 58.

is provided for determining the meaning of the phrase "smoothly transitioning," other than to use the words "gentle transition" to describe it, which provides no greater clue to its meaning than the original phrase. This being the case, from our perspective one of ordinary skill in the art would have appreciated that the transition between the inclined surface and the lateral surface for seating the sealing ring must be smooth enough to allow the leading edge of the sealing ring to pass without difficulty. This conclusion is supported by Kondoh, which teaches providing inclined walls at two places so that the sealing ring can be "smoothly inserted." The first is wall 291, which is at the entrance to the cavity in which the sealing ring is installed, and the second is the inclined surface of the contacting grooves 293 and 294 (see column 4, lines 20-27). It therefore is our view that in the Kondoh construction the inclined groove wall is "smoothly transitioning" to the internal lateral surface to the extent required by claim 12, and therefore a *prima facie* case of obviousness is established and the rejection of claim 12 is sustained.

Claim 13 adds to claim 12 the requirement that the axial extent of the groove be approximately 20-30% of the axial length of the inner lateral surface of the seat, and claim 14 that the inclined side is inclined at about fifteen degrees. As we explained above in our refusal to sustain the rejections of claims 8 and 15, it is our view that these limitations would not have been obvious in view of the record before us, and for the same reasons we will not sustain the rejection of claims 13 and 14.

**SUMMARY**

The rejection of claims 8-11 and 13-18 is not sustained.

The rejection of claim 12 is sustained.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

**AFFIRMED-IN-PART**

IAN A. CALVERT	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	BOARD OF PATENT
NEAL E. ABRAMS	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
JOHN P. McQUADE	)	
Administrative Patent Judge	)	

NEA/jlb

Appeal No. 99-0214  
Application No. 08/372,126

Page 11

ROBERT J. PATCH  
YOUNG & THOMPSON  
745 SOUTH 23RD STREET  
ARLINGTON, VA 22202

