

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte NORMAN STEWART JONES  
and DAVID WOODROFFE

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Appeal No. 2002-1552  
Application No. 09/637,394

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ON BRIEF

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Before ABRAMS, STAAB, and BAHR, Administrative Patent Judges.  
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 9 and 10, which are all of the claims pending in this application.

We REVERSE.

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### BACKGROUND

The appellants' invention relates to an o-ring seal arrangement. An understanding of the invention can be derived from a reading of exemplary claim 9, which appears in the appendix to the Brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Bent	2,462,596	Feb. 22, 1949
McCuistion	2,647,810	Aug. 4, 1953
Herbruggen	3,214,182	Oct. 26, 1965

Claim 9 stands rejected under 35 U.S.C. § 103 as being unpatentable over McCuistion in view of Herbruggen.

Claim 10 stands rejected under 35 U.S.C. § 103 as being unpatentable over McCuistion in view of Herbruggen and Bent.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the Answer (Paper No. 11) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 10) and Reply Brief (Paper No. 12) for the appellants' arguments thereagainst.

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In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The appellants' invention is directed to improvements in floating elastomeric seals such as o-rings installed in a groove in a rod that moves within a passage. The claims on appeal are directed to the embodiment of the invention shown in Figure 6, in which the upper portion of the ring 30 is provided with a plurality of radially oriented passages 36 that allow communication of fluid pressure applied on the side of the seal that faces the passage 12 to the region 18 of the groove in the rod that is adjacent to the bottom (the vertical wall, as shown) of the groove.

As manifested in claim 9, the inventive seal comprises an elastomeric ring that is installed in a groove around a rod facing a wall of the passage through which the rod moves. The ring is

configured, on the side of said ring engaging the groove wall opposites said one wall, so as to provide at least one passage for fluid flow between, on one hand, the gap between said rod and said passage,<sup>1</sup> and, on the other hand, the region between the ring and the bottom of said groove.

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We wish to note at this point that, as we understand the appellants' invention, the recitation in the claims that the ring is "configured . . . to provide at least one passage . . ." (emphasis added) means that the ring has at least one transverse groove, indentation, or the like (see specification, page 12, line 24 to page 13, line 20; Figure 6).

It is the examiner's view that McCuiston discloses all of the subject matter recited in claim 9 except for the passage between the gap between the rod and the passage and the region between the ring and the bottom of the groove. However, according to the examiner, that structure is taught by Herbruggen, and it would have been obvious to one of ordinary skill in the art to install such a passage in the McCuiston o-ring "to prevent back-pressure and twisting of the seal," citing column 3, lines 15-75 and column 4, lines 1-28 of Herbruggen (Answer, page 3).

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*,

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the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

McCuiston discloses an elastomeric o-ring seal installed upon a piston reciprocating in a cylinder. As shown in Figure 3, the ring is sized to be of greater outside diameter than the groove within which it is installed so that it is flattened against the cylinder wall of the piston, as is shown in Figure 2 (column 3, lines 6-19). When fluid pressure is applied above the ring, it assumes the form shown in Figure 4 so that the ring "will be flowed by such pressure towards and slightly into the clearance between the piston and the cylinder wall . . . so as to ensure perfect sealing between these two members" (column 3, lines 40-44). The ring is oriented oppositely when the pressure is applied from below. It is important to note that in the McCuiston invention the sealing ring does not at any time engage the bottom wall of the groove (column 3, lines 22 and 23).

With regard to the limitations expressed in claim 9, McCuiston fails to disclose or teach a ring "configured . . . so as to provide at least one passage for fluid flow" between the gap between the piston and the passage and the gap between the ring and the bottom wall of the groove.

26 is in contact with the surface 40 of the cylinder wall and the opposite ridge portion 32 contacts the bottom of the groove 42. The ring is “slightly squeezed or compressed . . . so that at least some contact occurs between the packing ring ridge 26 and 32 and surfaces 40 and 42 respectively” (column 3, lines 36-39). A plurality of transverse grooves 38 are provided in the ring to allow communication of fluid pressure to both sides of the ring so that operating fluid acts upon angled inner side surface 23 and angled outer side surface 28. This results in increased sealing engagement between ring ridge 26 and surface 40 of the passage, and between ring ridge 32 and the bottom surface 42 of the groove within which the ring is installed (column 3, line 42 et seq.). The grooves increase the sealing pressure of the ridge edges upon these two surfaces, as well as preventing twisting of the ring in the groove by maintaining the orientation of the groove with respect to groove side surfaces 44 and 46 (column 3, lines 56-62).

Unlike the examiner, we fail to perceive any teaching, suggestion or incentive in either McCuiston or Herbruggen which would have led one of ordinary skill in the art to modify the McCuiston o-ring seal by providing it with at least one passage for fluid flow between the gap between the rod and the passage and the region between the ring and the bottom of the groove. Equalizing the pressure in these two areas to force the inner

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The mere fact that the prior art structure could be modified does not make such a modification obvious unless the prior art suggests the desirability of doing so. See, In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). From our perspective, one of ordinary skill in the art would not have been motivated to make the modification proposed by the examiner, for to do so would compromise the operation of the McCuistion invention. It therefore is our view that the combined teachings of the two references fail to establish a prima facie case of obviousness with regard to the subject matter recited in claim 9, and we will not sustain the rejection.

Other than specifying that the groove within which the ring is positioned resides in the wall of the passage rather than in the wall of the rod, claim 10 contains the same limitations as claim 9. Claim 10 stands rejected on the basis of McCuistion and Herbruggen, taken further with Bent, which is cited for its representation that it was known in the art at the time of the appellants' invention to place the groove within which the seal is installed in the wall of the passage (Figure 7) or the rod (Figure 6). Be that as it may, Bent fails to overcome the deficiency discussed above regarding combining McCuistion and Herbruggen and, for the reasons expressed in our discussion of the rejection of claim 9, we also will not sustain the rejection of claim 10.

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SUMMARY

Neither rejection is sustained.

The decision of the examiner is reversed.

REVERSED

NEAL E. ABRAMS )  
Administrative Patent Judge )  
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JENNIFER D. BAHR  
Administrative Patent Judge

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NEA:pgg

Arnold B. Silverman  
Eckert Seamans Cherin & Mellott  
600 Grant Street Forth Second Floor  
Pittsburgh, PA 15219