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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ZHOU YANG, RYAN C. NOSS, BRIAN
RUGGIERO, JOHN A. SCHWOERER, and NEIL FUCHS

Appeal 2011-002060
Application 11/401,260
Technology Center 3700

Before: PHILLIP J. KAUFFMAN, BRETT C. MARTIN, and
HYUN J. JUNG, *Administrative Patent Judges*.

MARTIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Zhou Yang et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-16. Appellants' representative presented oral argument on January 24, 2013. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

THE INVENTION

Appellants' invention is directed generally to "systems and methods for controlled seating of engine valves." Spec., para. 0002. Claim 1, reproduced below with emphasis added, is illustrative of the claimed subject matter:

1. A valve seating device, comprising:
a housing having a bore formed therein;
an outer piston slidably disposed in the bore, the outer piston having an orifice formed therein; and
a catch piston slidably disposed in the outer piston, said catch piston *having a cone-shaped extension extending from the catch piston into the outer piston orifice.*

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Vorih '841	US 6,192,841 B1	Feb. 27, 2001
Vorih '824	US 6,510,824 B2	Jan. 28, 2003

THE REJECTION ON APPEAL

The Examiner made the following rejection:

Claims 1-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Vorih '841 and Vorih '824. Ans. 3-4.

ANALYSIS

Each of independent claims 1, 15, and 16 includes the limitation emphasized above with respect to a “cone-shaped extension extending from the catch piston into the outer piston orifice.” The Examiner admits that Vorih '841, among other things, “fail[s] to specifically disclose the catch piston extension being cone-shaped.” Ans. 4. The Examiner then finds that Vorih '824 “teaches a valve seating device comprising a piston (690) with a cone-shaped extension tapered linearly from a base portion to a terminus.” *Id.* (citing to Vorih '824 col. 23, ll. 10-40 and Fig. 27). The Examiner then concludes that it would have been obvious to combine these teachings because “the use thereof would have provided a more controllable valve seating device.” *Id.*

Appellants counter that the portions of Vorih '824 cited by the Examiner “do not contain any disclosure related to a valve seating device,” but rather “it discloses an ‘ISM’ or Initial Start Mechanism.” App. Br. 12 (citing to Vorih '824 col. 20, ll. 40-67). Appellants then go on to provide several persuasive arguments explaining how the functionality of an ISM operates to perform entirely different tasks within an engine unrelated to valve seating. *See* App. Br. 12-15. We agree that an ISM has little to no relation to the specific functionality of a valve seating device that relates to the claimed projection at issue, and that the ISM piston performs entirely different functionality than the valve seating disclosed in either the claims or the rest of Vorih '824. The Examiner’s only response to Appellants’ argument regarding the differences between an ISM and a valve seating device is to assert that “Vorih '824 does clearly disclose a valve seating device” while pointing to the Abstract. Ans. 5. While it is true that Vorih '824 does also discuss examples of valve seating among the nearly eighty

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figures and twenty-five-plus pages of disclosure, the specific disclosure and one figure utilized by the Examiner in the rejection relates exclusively to an ISM.

Further, while the Examiner asserts that Appellants' argument regarding the use of the ISM feature in valve seating relates to fluid throttling, which is not specifically claimed (*see* Ans. 5), it is important to note that for the purpose of combining the two Vorih references, one of skill in the art would need some reason to utilize the feature of the ISM at issue in a valve seating device. The function of the cone-shaped projection, whether claimed or not, is important as it relates to why the teachings in the references would be combined. As Appellants correctly state, "the conical flare of the upright piston 690 in the ISM mechanism of Vorih '824 cannot be used to throttle hydraulic fluid because it is placed outside the hydraulic fluid bore 695 and is not supposed to come in contact with hydraulic fluid." App. Br. 13. We agree with Appellants that "[t]he similarities between the cone-shaped extension of the catch piston disclosed in the subject application and the conical flare of the upright piston 690 shown in Figure 27 of Vorih '824 starts and ends with their shape being conical." *Id.* Accordingly, we find Appellants' arguments against the Examiner's conclusion of obviousness to be persuasive. As such, we cannot sustain the Examiner's decision to reject claims 1-16 as obvious over the combination of Vorih '841 and '824.

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DECISION

For the above reasons, we REVERSE the Examiner's decision to reject claims 1-16.

REVERSED

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