



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/984,330	01/04/2011	Mark A. Hentschel	508007	2102
53609	7590	09/12/2019	EXAMINER	
REINHART BOERNER VAN DEUREN P.C. 2215 PERRYGREEN WAY ROCKFORD, IL 61107			JELLETT, MATTHEW WILLIAM	
			ART UNIT	PAPER NUMBER
			3753	
			NOTIFICATION DATE	DELIVERY MODE
			09/12/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

RockMail@reinhartlaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARK A. HENTSCHEL,
JEROME C. KLOPP, and JESSE WARDEH

Appeal 2018-000498
Application 12/984,330
Technology Center 3700

Before JENNIFER D. BAHR, LINDA E. HORNER, and
PAUL J. KORNICZKY, *Administrative Patent Judges*.

KORNICZKY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner’s decision, as set forth in the Final Office Action, dated December 2, 2016 (“Final Act.”), rejecting claims 1–20 under pre-AIA 35 U.S.C. § 102(b) as anticipated by Hiraishi (US 6,076,550, issued June 20, 2000) and/or, in the alternative, under pre-AIA 35 U.S.C. § 103(a) as obvious over Hiraishi either alone or in combination with Cooper (US 5,941,502, issued August 24, 1999). We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

THE CLAIMED SUBJECT MATTER

The claims generally relate “to solenoid operated valves, and more particularly to apparatuses for connecting a solenoid coil assembly on a pilot operated water valve.” Spec. ¶ 1. Claims 1 and 12 are the independent claims on appeal. Claim 1, reproduced below with disputed limitations italicized for emphasis, is illustrative of the claimed subject matter:

1. A coil capture *weld ring* to attach a solenoid coil assembly to a valve body, comprising:
 - a body defining a plurality of locking tabs configured for locking engagement with the solenoid coil assembly;
 - a *weld skirt* extending from the body and configured for attachment to the valve body.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Robertshaw Controls Company. Appeal Brief, dated March 31, 2017 (“Appeal Br.”), 2.

DISCUSSION

In the anticipation rejection under 35 U.S.C. § 102(b) and the obviousness rejection under 35 U.S.C. § 103 based on Hiraishi alone, the Examiner finds that Hiraishi discloses all of the limitations of claims 1–20. Final Act. 6–7; *see* Ans. 16–23. In particular, the Examiner states that independent claim 1 requires that the “weld ring” and “weld skirt” be capable of being welded, and does not recite that the ring and skirt are actually welded. Ans. 16; Final Act. 7. Relying on MPEP § 2112, the Examiner finds that Hiraishi’s main seat 81 inherently satisfies the requirements of the recited “weld ring” and the bottom portion of seat 81 inherently satisfies the requirements of the recited “weld skirt” because seat 81 is made of “resin” and a “resin” is “capable of being welded.” Ans. 17–18 (citing MPEP § 2112); Final Act. 3. For evidence supporting this finding, the Examiner relies on Cooper’s disclosure that “thermoplastic material” may be spin welded to the valve body. Ans. 17; Final Act. 3 (citing Cooper, 3:15–20 (“The enlarged diameter flange 54 of the armature guide tube 50 is retained in the body by an annular retaining member or ring 56 which, in the presently preferred practice is formed of thermoplastic material as is body 14; and, ring 56 is preferably secured to the body by weldment such as by spin welding.”)). The Examiner states that because “Cooper’s synthetic polymer material is also known as a synthetic resin,” Hiraishi’s resin material also may be spin welded. Ans. 17.

Appellant argues that the Examiner erroneously finds that Hiraishi discloses the recited “weld ring” and “weld skirt” because “Cooper makes no mention of ‘resin’ and instead discloses its body and ring 56 are ‘thermoplastic material’ (*See e.g.* Col 3 lines 15-20) and as such does not

support the Examiner's assertion that [Hiraishi's] resin may be welded.”
Reply Brief, dated October 17, 2017 (“Reply Br.”), 5.

Appellant’s argument is persuasive. “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993).

Here, the Examiner does not define the terms “resin” or “thermoplastic material,” or provide persuasive evidence that *all* resins may be welded or that *all* resins are thermoplastic materials that may be spin welded. “Resin” is a broad term that means

1a: any of various solid or semisolid amorphous fusible flammable natural organic substances that are usually transparent or translucent and yellowish to brown, are formed especially in plant secretions, are soluble in organic solvents (such as ether) but not in water, are electrical nonconductors, and are used chiefly in varnishes, printing inks, plastics, and sizes and in medicine

2a: any of a large class of synthetic products that have some of the physical properties of natural resins but are different chemically and are used chiefly in plastics

b: any of various products made from a natural resin or a natural polymer

Resin Definition, Merriam-Webster.com, <https://www.merriam-webster.com/dictionary/resin> (last visited August 23, 2019) (emphasis added). The term “thermoplastic” means “capable of softening or fusing

when heated and of hardening again when cooled // thermoplastic *synthetic* resins.” *Thermoplastic Definition*, Merriam-Webster.com, <https://www.merriam-webster.com/dictionary/thermoplastic> (emphasis added). “Thermoplastic” also “denot[es] substances (especially *synthetic* resins) that become plastic on heating and harden on cooling, and are able to repeat these processes.” *Thermoplastic Definition*, Bing.com, <https://www.bing.com/search?q=thermoplastic+definition&qs=AS&pq=thermoplastic+de&sc=8-16&cvid=2CC5128EA3C54DA6B743C54368DCFC99&FORM=QBRE&sp=1> (last visited August 23, 2109) (emphasis added). In light of these definitions of “resin” and “thermoplastic” material, some *synthetic* resins may be thermoplastic materials, but resin is a broad term that covers many different materials, only some of which may be synthetic resins. The Examiner, however, does not present evidence or technical reasoning that Hiraishi’s resin is *necessarily* a synthetic resin or a thermoplastic material that *necessarily* becomes plastic on heating and hardens on cooling. Thus, the Examiner’s finding that Hiraishi’s resin seat 81 may be spin welded and inherently satisfies the requirements of the recited “weld ring” and “weld skirt” is erroneous.

For the reasons above, the rejections of claim 1 under 35 U.S.C. §§ 102 and 103 are not sustained. Likewise, the rejections of claims 2–20, which depend from claim 1, are not sustained.

In the obviousness rejection under 35 U.S.C. § 103 based on Hiraishi and Cooper, the Examiner finds that the combined teachings of Hiraishi and Cooper teach or suggest all of the limitations of claims 1–20. Final Act. 6–7. The Examiner reasons that it would have been obvious to one of ordinary

skill in the art to use Cooper's spin welded connection in lieu of Hiraishi's press fit connection between the skirt and valve because using a weldment at the junction between Hiraishi's valve body and skirt (1) "provid[es] a secure fluid tight connection between the skirt and valve body of Hiraishi," and (2) "increase[es] the accuracy of the weld and efficiency of the assembly of the device during manufacturing." *Id.* at 8.

Appellant argues that "[i]t was error for the Examiner to propose a solution to a non[-]existent problem in Hiraishi to support the asserted combination of references." Reply Br. 8 (emphases omitted). We agree. Hiraishi already discloses a water-tight connection and efficient assembly during the manufacturing process. For example, Hiraishi states that its solenoid valve is used for water supply control and, as such, it is understood to be "fluid tight." Hiraishi, 1:30–31. Further, Figures 18 and 19 disclose O-rings for fluid-tight sealing.

Hiraishi further states that its main seat 81 is made of resin for attaching the solenoid valve A to the valve main body 80 (Hiraishi, 21:43–45), and "[t]herefore, solid fixing by screwing or by using a stopper ring or the like is not necessary but, for example, attachment by fitting or pinning of resin can be performed whereby the attaching operation is facilitated and reduction in cost can be achieved" (*id.* at 21:63–67). Thus, Hiraishi discloses that its solenoid valve and assembly process are advantageous for their cost reduction and efficiency. We agree with Appellant that the Examiner's rationale to combine Hiraishi and Cooper fails to recognize Hiraishi's cost reduction solution with attachment by fitting or pinning of resin and, instead, seeks to introduce a welding process by replacing an

already fluid-tight attachment with a more expensive welding process.

Reply Br. 10.

For these reasons, the Examiner's rationale for combining Hiraishi and Cooper is not supported by a rational underpinning and the rejection of claim 1 under § 103 is not sustained. Likewise, the rejection of claims 2–20, which depend from claim 1, is not sustained.

CONCLUSION

In summary:

Claims Rejected	Basis (35 U.S.C. §)	Affirmed	Reversed
1–20	§§ 102, 103 Hiraishi		1–20
1–20	§ 103 Hiraishi, Cooper		1–20
Overall Outcome			1–20

The Examiner's rejections of claims 1–20 are REVERSED.

REVERSED