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Agilent Technologies, Inc. in care of:  
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EXAMINER
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DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MANFRED BERNDT, KONSTANTIN CHOIKHET,  
and PHILIP HERZOG

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Appeal 2015-005975  
Application 12/763,806  
Technology Center 1700

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Before JEFFREY T. SMITH, KAREN M. HASTINGS, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–7. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants' invention is directed to a pump unit. App. Br. 2. Claim 1 illustrates the subject matter on appeal and is reproduced below:

1. A pump unit comprising  
a primary piston pump,  
a secondary piston pump,  
a flow path adapted for fluidically connecting in series the  
primary piston pump and the secondary piston pump, wherein

the pump unit's a duty cycle of the pump unit comprises a delivery-and-fill phase, in which the primary piston pump supplies a flow of liquid to the secondary piston pump, and during the delivery-and-fill phase, the flow of liquid supplied by the primary piston pump is partly used for filling up the secondary piston pump and partly used for maintaining continuous flow of liquid dispensed at an outlet of the secondary piston pump,

the flow path comprises a heat exchanger, wherein liquid supplied by the primary piston pump passes through the heat exchanger before being supplied to the secondary piston pump, and

the heat exchanger is adapted for reducing a temperature difference between a temperature of liquid supplied to heat exchanger and a temperature of the secondary piston pump, in that the heat exchanger is kept at a temperature of the secondary piston pump, so that after having passed the heat exchanger, liquid supplied to the secondary piston pump has substantially the same temperature as the secondary piston pump itself.

Appellants (*see* Appeal Brief, *generally*) request review of the following rejections from the Examiner's Final Office Action:

I. Claims 1, 2, 5, and 6 rejected under 35 U.S.C. § 102(e) as anticipated by Berger et al., (US 2010/0040483 A1, published February 18, 2010).<sup>1</sup>

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<sup>1</sup> The Examiner's rejection statement has been modified to reflect that the anticipatory rejection is based solely on the reference to Berger. The Examiner's omission is considered harmless error given that both the Examiner and Appellants discuss the anticipatory rejection in the Final Action and Appeal Brief. Final Act. 2–5; App. Br. 7–8.

II. Claims 1, 2, 5, and 6 rejected under 35 U.S.C. § 103(a) as unpatentable over Berger, McMangill (US 4,003,679, issued January 18, 1977), Saitoh (US 6,228,153 B1, issued May 8, 2001), Takao et al., (US 2004/0164013 A1, published August 26, 2004) and Snodgrass et al, (US 5,167,837, issued December 1, 1992).

III. Claims 3 and 4 rejected under 35 U.S.C. § 103(a) as unpatentable over Berger, McMangill, Saitoh, Takao, Snodgrass and Yanikoski (US 2,586,899, issued February 26, 1952).

IV. Claim 7 rejected under 35 U.S.C. § 103(a) as unpatentable over Berger, McMangill, Saitoh, Takao, Snodgrass and Juvet et al., (US 3,902,848, issued September 2, 1975). Claim 7 rejected under 35 U.S.C. § 103(a) as unpatentable over Berger, McMangill, Saitoh, Takao, Snodgrass and Juvet et al., (US 3,902,848, issued September 2, 1975).

## OPINION

Claim 1 is directed to a pumping unit comprising a primary pump where the flow of liquid supplied by the primary piston pump is partly used for filling up a secondary piston pump and partly used for maintaining continuous flow of liquid dispensed at an outlet of the secondary piston pump.

*Rejection I (35 U.S.C. § 102(e))<sup>2</sup>*

We REVERSE the Examiner's rejection of claims 1, 2, 5, and 6 under 35 U.S.C. § 102(e) as anticipated by Berger for the reasons of record given by Appellants. App. Br. 6, 8.

We refer to the Examiner's Final Action for a statement of this rejection. Final Act. 2–4.

We agree with Appellants that Berger does not teach a delivery-and-fill phase where the flow of liquid supplied by a primary piston pump is partly used for filling up the secondary piston pump and partly used for maintaining continuous flow of fluid dispensed at an outlet of the secondary piston pump. App. Br. 8. The Examiner has not directed us to any portion of Berger that adequately describes this claimed feature.

Accordingly, we reverse the Examiner's rejection of claims 1, 2, 5, and 6 under 35 U.S.C. § 102(e) for the reasons presented by Appellants and given above.

*Rejection II (Rejection under 35 U.S.C. § 103(a))<sup>3</sup>*

After review of the respective positions provided by Appellants and the Examiner, we AFFIRM the Examiner's rejection of claims 1, 2, 5, and 6 under 35 U.S.C. § 103(a) as unpatentable over Berger, McMangill, Saitoh,

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<sup>2</sup> We limit our discussion to independent claim 1 for this rejection.

<sup>3</sup> Appellants present arguments for independent claim 1 and do not present separate arguments for the dependent claims 2, 5, and 6. *See* Appeal Brief, *generally*. Accordingly, we select claim 1 as representative of the subject matter before us on appeal. Claims 2, 5, and 6 stand or fall with claim 1.

Takao, and Snodgrass for the reasons presented by the Examiner.<sup>4</sup> We add the following for emphasis.

The Examiner found Berger teaches a pumping unit that differs from the claimed invention in that Berger does not disclose the primary or first piston pump is simultaneously used to fill up the secondary piston pump and partly maintain continuous flow of liquid dispensed through secondary pump outlet as claimed. Final Act. 2–6; Berger Figure 7, ¶¶ 4–6, 50–52, 58–60. The Examiner found Snodgrass teaches it was known in the art to connect pumps in series such that fluid from the first pump 32 is delivered to an end of a second pump 124 that is near to dispense outlet 16 of the second pump 124. Final Act. 6; Snodgrass Figure 2. Moreover, Snodgrass specifically discloses that the second pump 124 can be selectively operated in a manner that the fluid from the first pump 32 can be (1) accumulated in the upper compartment 131 of pump 124 for subsequent dispense; (2) dispensed immediately through passage 119 and port 130 to outlet tubing 16 of pump 124; or (3) partially accumulated and partially dispensed (as claimed by Appellants). Snodgrass col. 7, ll. 21–32. According to the Examiner, Snodgrass discloses these arrangements as allowing a non-interrupted dispensing by the second pump, in which the reservoir space of such pump is replenished by the first pump. Final Act. 6; Snodgrass col. 3, ll. 35–40. Thus, the Examiner determined that the combined teachings of the cited art

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<sup>4</sup> A discussion of McMangill, Saitoh and Takao is unnecessary for disposition of this rejection. These references were cited by the Examiner to teach a feature that is taught or suggested by the primary reference to Berger. Final Act. 5.

would have led one skilled in the art to the claimed invention. Final Act. 5–6.

Appellants argue Berger’s thermal conditioning device 80 is not arranged in between the pumps of the metering pump 82 but between the booster pump 70 and the metering pump 82. App. Br. 7. Appellants also argue thermal conditioning device 80 has the task of regulating the temperature of the fluid between booster pump 70 and metering pump 82 and, thus, does not disclose reducing a temperature difference between the fluid before the heat exchanger and the secondary pump, as claimed. *Id.* at 7–8.

We are unpersuaded by Appellants argument for the reasons given by the Examiner. Ans. 10. Moreover, the Examiner’s rejection is premised on the booster pump 70 and the metering pump 82 of Berger being the respectively claimed first and second pumps with the thermal conditioning device located between these pumps. Final Act. 3. Appellants’ arguments about the location of the thermal conditioning device 80 do not address the rejection before us for review on appeal.

Appellants argue Berger does not disclose the claimed delivery and fill phase. App. Br. 8.

We are also unpersuaded by this argument. The Examiner is relying on Snodgrass as teaching the claimed delivery and fill phase (Snodgrass option 3). Final Act. 6; Snodgrass col. 7, ll. 21–32. Appellants have not adequately explained why one skilled in the art would not have been capable of modifying the pump unit of Berger to operate as taught by Snodgrass option 3 (partial delivery and partial fill phase), particularly given that

Snodgrass teaches option 3 as an adequate alternative to Berger's disclosed delivery and fill phase, which corresponds to Snodgrass option 1. Snodgrass col. 7, ll. 21–32.

Appellants argue the Examiner presented no basis for why it is necessary to have the piston assembly in the upstream booster pump in order to assure accurate metering, or why accurate metering is even required. App. Br. 8–9.

We also find this argument unavailing. Berger discloses that when fluid being pumped by a piston pump is relatively incompressible, these pumps are frequently referred to as metering pumps. Berger Figure 7, ¶ 7. Thus, as noted by the Examiner, Berger discloses or suggests the use of piston pumps upstream of the booster pump. Final Act. 3; Ans. 11; Berger Figure 7. Berger additionally discloses the metering pump 82 accurately meters the fluid to the process stream without the need of further compression. Snodgrass ¶ 51. Thus, Appellants have not adequately explained error in the Examiner's determination of obviousness.

Accordingly, we affirm the Examiner's rejection of claims 1, 2, 5, and 6 under 35 U.S.C. § 103(a) for the reasons presented by the Examiner and given above.

#### *Rejections III and IV*

The Examiner separately rejected dependent claims 3 and 4 (Rejection III) and 7 (Rejection IV) under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of the cited art presented when discussing the obviousness rejection of claim 1 above (Rejection II) together with additional secondary references. Final Act. 7–8. In addressing these

separate rejections, Appellants rely primarily on the arguments presented when discussing Rejection II. App. Br. 10–11. Appellants did not substantially address or further distinguish the respectively cited secondary references based on the additional limitations of the dependent claims. *Id.*

Accordingly, we sustain the Examiner’s Rejections III and IV for the reasons presented by the Examiner and given above.

#### ORDER

The Examiner’s prior art rejections of claims 1, 2, 5 and 6 under 35 U.S.C. § 102(e) (Rejection I) is reversed.

The Examiner’s prior art rejections of claims 1–7 under 35 U.S.C. § 103(a) (Rejections II–IV) are affirmed.

#### TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED