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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AVI EFRATY

Appeal 2018-003282
Application 13/381,960
Technology Center 1700

BEFORE BEVERLY A. FRANKLIN, LINDA M. GAUDETTE, and
JAMES C. HOUSEL, *Administrative Patent Judges*.

FRANKLIN, *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 to reject claims 1, 3, and 13–16. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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 Desalitech LTD. Appeal Br. 3.

CLAIMED SUBJECT MATTER

Claim 1 is illustrative of Appellant's subject matter on appeal and is set forth below:

1. An integrated system comprising:

a Brackish Water Reverse Osmosis (BWRO) unit having an inlet, a pressurized brine outlet and a permeate outlet; and a closed circuit desalination retrofit unit for further desalination of pressurized feed received from said (BWRO) unit, the retrofit unit comprising:

a closed circuit comprising one or more desalination modules, each of said desalination modules comprising a respective module inlet and a respective module outlet, each of said desalination modules comprising one or more membrane elements; and a closed circuit conducting line with circulation means for recycling concentrate from the respective module outlets to the respective module inlets of said one or more desalination modules;

a conducting line for supply of a pressurized brine flow from said BWRO unit to said closed circuit of said retrofit unit;

a conducting line of permeate from said retrofit unit to said inlet of said BWRO unit, said permeate to be recycled as part of a feed source of said BWRO unit, or to the permeate outlet of said BWRO unit for combining with permeate produced by the BWRO unit;

a first valve means in said closed circuit conducting line of said retrofit unit to enable flow from said respective module outlets to said respective module inlets of said desalination modules and for discharge of brine from said respective module outlets of said desalination modules in said retrofit unit without stopping desalination;

a conducting line at an outlet of said desalination module to enable discharge of brine from said closed circuit of said retrofit unit;

a sensor for measuring electric conductivity of recycled concentrate in said closed circuit of said retrofit unit; and

monitoring and control systems to enable an automated actuation of the integrated system and continuous closed circuit desalination of desired recovery in said retrofit unit performed by a two-step consecutive sequential process with closed circuit desalination experienced most of the time and with brine discharge and fresh feed recharge occurring at a desired desalination recovery level,

wherein a pressurized brine flow from the BWRO unit is diverted to the respective module inlets of the desalination modules of the retrofit unit by a second valve means which enables supply of the pressurized brine from the BWRO for energy saving, wherein the retrofit unit is non autonomous and wherein the retrofit unit is activated or stopped by the second valve means, and wherein the automated actuation of the integrated system comprises controlling the actuation of the second valve means.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Kawashima	US 5,238,574	Aug. 24, 1993
Efraty	US 2008/0023410 A1	Jan. 31, 2008

THE REJECTION

Claims 1, 3, and 13–16 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Kawashima in view of Efraty.

OPINION

To the extent that Appellant has presented substantive arguments for the separate patentability of any individual claim on appeal, we will address each separately consistent with 37 C.F.R. § 41.37(c)(1)(iv) (2017). We thus select claim 1 as representative in this appeal.

Upon consideration of the evidence and each of the respective positions set forth in the record, we find that the preponderance of evidence supports the Examiner's findings and conclusion that the subject matter of Appellant's claims is unpatentable over the applied art. Accordingly, we sustain the Examiner's rejection on appeal for the reasons set forth in the

Final Office Action and in the Answer, and affirm, with the following emphasis.

Appellant argues that Kawashima teaches salt water reverse osmosis (SWRO) systems, and that such systems are completely different from brackish water reverse osmosis systems (BWRO) for the reasons stated on page 7 of the Appeal Brief. Appellant concludes that thus Kawashima does not suggest a BWRO system as claimed. Appeal Br. 8.

We are unpersuaded by this argument for the reasons provided by the Examiner on page 3 of the Answer. Therein, the Examiner explains that Appellant's claims are device claims, and therefore the material worked upon (i.e., the type of water) is not a claim limitation. We agree.

"[A]pparatus claims cover what a device is, not what a device does."

Hewlett-Packard Co. v. Bausch & Lomb, Inc., 909 F.2d 1464, 1468 (Fed. Cir. 1990). The Examiner also states that Appellant indicates that recovery and feed aspects are different between SWRO and BWRO, but states that this fails to show that the actual structure (i.e. the membrane module) is structurally or patentably distinct. The Examiner states that because SWRO is capable of processing higher salt content water, it is further capable of processing water of lower salt content as well. The Examiner further states that Appellant's arguments regarding the particular water treated and the recovery rates are not commensurate with the scope of the claims. We agree and note that such arguments are unpersuasive of reversible error because they are not grounded on limitations that appear in the claims. *In re Hiniker Co.*, 150 F.3d 1362, 1368–1369 (Fed. Cir. 1998); *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

Appellant further argues that Kawashima is not properly considered analogous art. Appeal Br. 8. However, we agree with the Examiner's response made on page 4 of the Answer. Therein, the Examiner states that Appellant's invention relates to improved performance of reverse osmosis systems, and that Kawashima also involves the same field of endeavor (reverse osmosis systems). Kawashima, Abstract and Title. The Examiner also states that Kawashima is further considered to be reasonably pertinent to the instant invention as it is directed towards reverse osmosis systems and improvements thereto. Ans. 4.

On page 8 of the Appeal Brief, Appellant admits that the use of SWRO membranes in BWRO systems is allowed to enable a higher salt rejection, but asserts that the use of BWRO membranes in SWRO systems is not practical due to different pressure ratings. Appellant then states that the use of a low pressure RO membrane in the two-stage RO unit by Kawashima having an inlet feed >40,000 ppm is unclear. Appellant submits that a two-stage RO design requires that the pressure at inlet to the second stage will be at the level of the pressurized brine of the first stage (or higher if a booster pump is utilized), whereas, the inlet pressure to the second stage in Kawashima disobeys this requirement by implementing use of its "pressure reducing means." Appellant provides an example on pages 8–9 of the Appeal Brief to show that the second stage in Kawashima is not possible. Appeal Br. 9. Appellant concludes that accordingly, Kawashima can be said to teach only a single-pass SWRO through a complex ineffective design without an energy recovery device (ERD). We are unpersuaded by these arguments, and agree with the Examiner's stated response made on page 5 of the Answer. Therein, the Examiner states that Appellant relies solely on

attorney arguments, and that there is no persuasive evidence, such as a corresponding declaration or other expert evidence supporting this position. The Examiner also states that the argument is an effort to show that the Kawashima patent is inoperative, and such argument is insufficient to provide evidence of inoperability. We agree, and note that every patent is presumed valid (35 U.S.C. 282), and that presumption includes the presumption of operability (*Metropolitan Eng. Co. v. Coe*, 78 F.2d 199 (D.C. Cir. 1935)). The Examiner also states that Kawashima teaches a range of pressures appropriate for the first stage (40–70 bar, col. 3, ll. 30-45; note that 1 bar is approximately equal to 1 kg/cm²g) and for the second stage (30–70 bar, col. 4, ll. 49–56). The Examiner finds that Kawashima thus teaches ranges of pressures within which points exist which make for an operable system. The Examiner also states that Appellant has not shown that Kawashima is inoperable or that membrane (12) would produce no permeate for all disclosed operational ranges. Ans. 5. Appellant does not dispute these findings. *See generally* Appeal Br.

Appellant also argues that BWRO system features are well known to one skilled in the art so there is no point in elaborating further on the systems and further that the BWRO is not the essence of the invention. Appeal Br. 9. We agree with the Examiner that the claims do not sufficiently specify the structure of the BWRO system to distinguish that aspect (the BWRO unit) from the applied art. Ans. 4.

Appellant further argues that Efraty's Figure 2a requires a pressurized stream whereas Kawashima teaches using pressure reducing means (16) prior to module (12), and thus Efraty's module would not be able to operate and therefore the combination would result in an inoperable device. Appeal

Br. 11. We agree with the Examiner's response that Kawashima's element (16) is a pressure reducing means not a pressure eliminating means, and thus there is still operational pressure on the outlet side of element (16). Ans. 4–5. The Examiner finds that Kawashima expressly teaches the low pressure membrane's particular feed pressure parameters (30–70kg/cm²g) which is approximately 30–70 bar (col. 4, ll. 49–56 for example) and further indicates the pressure reducing means (16) is a pressure reducing (not eliminating) valve or a restriction orifice or the like (col. 4, ll. 57–60). The Examiner states that thus Kawashima provides pressure to element (12) for operation. We agree.

Appellant also argues that Kawashima's pressure reducing means (16) disables proper operation of any standard RO system. Appeal Br. 13. This is further not found to be persuasive for the same reasons discussed, *supra*.

Appellant argues that the combination of Kawashima and Efraty cannot provide the non-autonomous aspect since Efraty is autonomous. Appeal Br. 10–11. This is not found persuasive for the reasons provided by the Examiner on pages 6–7 of the Answer, which we adopt as our own.

Appellant also argues there is no motivation to combine the applied art, and that there is a teaching away. Appeal Br. 13. We are unpersuaded by such argument for the reasons provided by the Examiner on pages 7–8 of the Answer.

Appellant discusses counterpart applications that have been granted by foreign patent offices. This is not persuasive. We agree with the Examiner's response on page 8 of the Answer because foreign patent office determinations do not affect prosecution concerning United States patent law.

In view of the above, we affirm the rejection.

CONCLUSION

We affirm the Examiner's decision.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3, 13-16	103	Kawashima, Efraty	1, 3, 13-16	

TIME PERIOD FOR RESPONSE

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

AFFIRMED