



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.
14/130,989	05/02/2014	Joachim Jankowski	3724361.00236	7966
29200	7590	09/17/2020	EXAMINER	
K&L Gates LLP-Chicago Baxter P.O. Box 1135 Chicago, IL 60690-1135			WUN, JULIA L	
			ART UNIT	PAPER NUMBER
			1778	
			NOTIFICATION DATE	DELIVERY MODE
			09/17/2020	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):

USpatentmail@klgates.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOACHIM JANKOWSKI, WALTER ZIDEK,
FALKO BRETTSCHEIDER, and VERA JANKOWSKI

Appeal 2019-005958
Application 14/130,989
Technology Center 1700

Before ERIC B. GRIMES, LINDA M. GAUDETTE, and LILAN REN,
Administrative Patent Judges.

GAUDETTE, *Administrative Patent Judge.*

DECISION ON APPEAL¹

The Appellant² appeals under 35 U.S.C. § 134(a) from the Examiner’s decision finally rejecting claims 1–5, 8–12, and 14–16.³

We AFFIRM.

¹ This Decision includes citations to the following documents: Specification filed Jan. 6, 2014 (“Spec.”); Final Office Action dated Feb. 8, 2019 (“Final Act.”); Appeal Brief filed May 2, 2019 (“Appeal Br.”); Examiner’s Answer dated June 6, 2019 (“Ans.”); and Reply Brief filed Aug. 6, 2019 (“Reply Br.”).

² We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. The Appellant identifies the real parties in interest as Baxter International Inc. and Baxter Healthcare SA. Appeal Br. 2.

³ We have jurisdiction under 35 U.S.C. § 6(b).

CLAIMED SUBJECT MATTER

The invention relates to a dialysis machine for effectively removing protein-bound uraemic toxins from the blood of dialysis patients. Spec. 2:15–17. “The invention is based on the finding that the bonds between uraemic toxins and plasma proteins are, as a rule, no[t] ‘true’ chemical (covalent) bonds but reversible bonds . . . substantially based on the electrostatic properties of and the interaction between the relevant molecules.” *Id.* at 2:24–27. The inventive dialysis machine is said to reduce the bond strength or interaction intensity by means of a device configured to generate high-frequency electromagnetic fields. *See id.* at 2:27–29. This achieves an improved separation of uraemic toxins from a patient’s blood during dialysis. *Id.* at 2:33–34. “As a result, the relevant uraemic toxins can be dialysed to a greater extent and more effectively.” *Id.* at 2:34–35. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A dialysis machine comprising:
 - a dialysate flow system;
 - a blood flow system;
 - a dialyser; and
 - a device configured to generate a high-frequency electromagnetic field having a frequency from 1 MHz to 20 MHz, and directly apply the high-frequency electromagnetic field to the dialyser such that blood to be cleaned can be exposed to the high-frequency electromagnetic field during at least part of the passage through the dialyser to cause toxins to be freed from proteins in the blood.

Appeal Br. 16 (Claims App.).⁴

⁴ Support for any subsequent citations to specific claim language may be found in the Claims Appendix, Appeal Br. 16–17.

REJECTIONS

1. Claims 1–5, 8, and 10 are rejected under 35 U.S.C. § 103(a) as unpatentable over Castle (US 5,261,874, iss. Nov. 16, 1993) in view of Dobbeleer (US 3,484,369, iss. Dec. 16, 1969) and Kienman (US 2009/0012655 A1, pub. Jan. 8, 2009). Final Act. 17.

2. Claims 9, 14, and 15 are rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, Kienman, and Vallee (US 2007/0221577 A1, pub. Sept. 27, 2007). Final Act. 22.

3. Claim 11 is rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, Kienman, and Kutushov (US 5,980,479, iss. Nov. 9, 1999). Final Act. 24.

4. Claim 12 is rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, Kienman, and Schäl (US 4,923,598, iss. May 8, 1990). Final Act. 25.

5. Claim 16 is rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, Kienman, and Arnold (US 5,139,675, iss. Aug. 18, 1992). Final Act. 26.

6. Claims 1–5, 8, and 10 are rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, European Commission (EU Funded Research into the impact of Electromagnetic Fields and Mobile Telephones on Health, Research Directorate-General, Health and Electromagnetic Fields, 2005) and Kienman. Final Act. 29.

7. Claims 9, 14 and 15 are rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, European Commission, Kienman, and Vallee. Final Act. 35.

8. Claim 11 is rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, European Commission, Kienman, and Kutushov. Final Act. 37.

9. Claim 12 is rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, European Commission, Kienman, and Schäl. Final Act. 38

10. Claim 16 is rejected under 35 U.S.C. § 103(a) as unpatentable over Castle in view of Dobbeleer, European Commission, Kienman, and Arnold. Final Act. 39.

11. Claims 1, 2, 10 and 16 are rejected on the ground of nonstatutory double patenting as unpatentable over claims 1–19 of US 9,682,181 in view of Castle and Dobbeleer. Final Act. 5.

12. Claims 3–5 are rejected on the ground of nonstatutory double patenting as unpatentable over claim 1 of US 9,682,181 in view of Castle, Dobbeleer, and Kienman. Final Act. 10.

13. Claims 9, 14, and 15 are rejected on the ground of nonstatutory double patenting as unpatentable over claim 1 of US 9,682,181 in view of Castle, Dobbeleer, and Vallee. Final Act. 11.

14. Claim 11 is rejected on the ground of nonstatutory double patenting as unpatentable over claim 1 of US 9,682,181 in view of Castle, Dobbeleer, and Kutushov. Final Act. 14.

15. Claim 12 is rejected on the ground of nonstatutory double patenting as unpatentable over claim 1 of US 9,682,181 in view of Castle, Dobbeleer, and Schäl. Final Act. 15.

OPINION

The Examiner rejected independent claim 1 over the combination of Castle, Dobbeleer, and Kienman, and rejected independent claim 16 over the same combination, further in view of Arnold. The Examiner also rejected independent claims 1 and 16 over the same combinations of references, but additionally relied on European Commission.

Castle discloses “methods and apparatuses for accessing flowing blood and for subjecting the blood to electrical conductive, electrostatic or electromagnetic fields or for radiating the blood with some type of radiation.” Castle 3:35–38. Radiation is effected via “one or more access ports or windows . . . disposed on a tubing, chamber, or attached apparatus through which blood flows including, but not limited to, the tubing used in dialysis machines.” *Id.* at 3:42–48. Castle states that a dialysis machine is taught by Dobbeleer. *Id.* at 5:63. Castle discloses that “[a] wide range of radiation with different parameters may be employed, e.g. radiation of differing frequency, wavelength, intensity, and hue.” *Id.* at 4:21–23. The Examiner found that Castle does not explicitly disclose “a device configured to generate a high-frequency electromagnetic field having a frequency from 1 MHz to 20 MHz” as required by claims 1 and 16. Final Act. 18. The Examiner relied on Kienman for a teaching of “a dialysis machine (dialysis system) that has means for generating a high-frequency electromagnetic field” in a range overlapping the Appellant’s claimed range. *Id.* at 18–19 (internal citation omitted).

The Appellant argues that the record evidence fails to support the Examiner’s finding that the ordinary artisan would have had a reason to substitute the electromagnetic field of Castle with Kienman’s high-

frequency electromagnetic field and coil, or had a reasonable expectation of success in making this modification to Castle. Appeal Br. 7–8; *see* Final Act. 18–19. The Appellant’s arguments fail to identify reversible error in the Examiner’s rejections for the reasons explained in the Answer and below.

The Appellant argues that “*Kienman* discloses a high-frequency electromagnetic field and coil for use in peritoneal dialysis (PD) (paragraph [0011]) to heat the dialysis fluid before it is pumped into the peritoneal cavity (paragraph [0010]).” Reply Br. 6; *see also* Appeal Br. 7. The Appellant argues that “[p]eritoneal dialysis does not involve pumping a patient’s blood,” *Kienman* does not teach or suggest radiating blood or a dialyser, and *Kienman* does not disclose that the invention can be used in applications other than medical fluid heating systems. Reply Br. 6; *see also* Appeal Br. 8. The Appellant thus contends that the ordinary artisan would not have had a reason to apply *Kienman*’s high-frequency electromagnetic field directly to a dialyser. Reply Br. 6; *see also* Appeal Br. 8. The Appellant’s arguments are not persuasive because they fail to identify error in the Examiner’s fact finding and reasoning. *See, e.g.*, Ans. 42 (“*Kienman* is not relied on to teach the use of an electromagnetic field in other systems. Rather, Castle is relied on for a teaching of using electromagnetic fields for blood treatment.” (citations omitted)).

In *Kienman*’s dialysis fluid heating system, “[t]ypical operating frequencies . . . are about twenty kHz to about one MHz, which are generally considered high frequencies.” *Kienman* ¶ 163. *Kienman* explains that “[a]udible noise limits the low frequency end of the frequency range.” *Id.* *Kienman* paragraph 163 supports the Examiner’s findings that the ordinary artisan would have selected a high frequency electromagnetic field for

radiating blood in Castle’s device because Kienman teaches that “high frequencies do not have the audible noise limits of lower frequencies.” Ans. 42–43; *see also* Final Act. 18–19.⁵ Kienman’s typical operating frequency range of about 20 kHz to about 1 MHz (Kienman ¶ 163) overlaps with the claimed frequency range of 1 MHz to 20 MHz (claims 1, 16). “[T]he existence of overlapping or encompassing ranges shifts the burden to the applicant to show that his invention would not have been obvious.” *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003). For the reasons explained in the Answer and discussed in connection with the Appellant’s evidence of unexpected results (*see infra* pp. 9–10), the Appellant has not met this burden. *See also* Spec. 3:32–33 (indicating that there is no criticality in the

⁵ In the Reply Brief, the Appellant argues that Castle is directed to radiating blood flowing through tubing and does not disclose applying an electromagnetic field directly to a dialyser as recited in claims 1 and 16. Reply Br. 4–5. The Appellant argues there would be drawbacks associated with modifying Castle’s dialyser to include access ports for applying radiation. *See id.* at 5. We need not address these newly advanced arguments. *Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (informative) (“The reply brief is *not* an opportunity to make arguments that could have been made during prosecution, but were not. Nor is the reply brief an opportunity to make arguments that could have been made in the principal brief on appeal to rebut the Examiner’s rejections, but were not.”). We note, however, that these arguments lack persuasive merit as they are not supported by evidence, and are also inconsistent with Castle’s teachings. *See* Castle 3:42–48 (“In one aspect, an apparatus is employed which includes one or more access ports or windows for radiating blood and/or for sensing/analyzing blood. The ports are associated with windows made of appropriate material disposed on a tubing, chamber, or attached apparatus through which blood flows”); *In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997) (explaining that argument by counsel cannot take the place of evidence).

claimed frequency range of 1 MHz to 20 MHz: “Said high-frequency electromagnetic field may have a frequency from 100 kHz to 1 GHz.”).

The Appellant argues that the Examiner has not cited evidence showing that the ordinary artisan would have believed that applying Kienman’s radiation to flowing blood in Castle’s device would be “safe, let alone effective” or had “a reasonable expectation of success in separating toxins from blood proteins.” Reply Br. 6. As noted above, Castle does not specify any limitations on the different frequencies that may be used to treat blood during dialysis. Thus, the Examiner’s findings were sufficient to shift the burden of persuasion to the Appellant to show that the ordinary artisan would not have had a reasonable expectation of success in combining the teachings of Castle and Kienman. *See In re Glaug*, 283 F.3d 1335, 1338 (Fed. Cir. 2002). The Appellant’s unsupported argument is not adequate to meet this burden. *See Geisler*, 116 F.3d at 1471.

The Appellant argues that the “claim language, ‘a device *configured to*,’ requires purposeful designing and specific structure to achieve the recited functionality of causing toxins to be freed from proteins in the blood.” Reply Br. 2 (emphasis added). The Appellant’s argument is inconsistent with the plain language of the claims and the written description. Specifically, the claims require a “device *configured to generate* a high-frequency electromagnetic field having a frequency from 1 MHz to 20 MHz, and *directly apply* the high-frequency electromagnetic field to the dialyser.” Claims 1, 16 (emphasis added). The claims do not require that the device is configured to free toxins from proteins in the blood. In other words, we agree with the Examiner that the language “to cause toxins to be freed from proteins in the blood” (claims 1 and 16) is a recitation of an

intended use or function. *See, e.g.*, Spec. 5:18–20 (“In addition, the dialysis machine according to the invention comprises means for carrying out the use according to the invention, in particular means for generating a high-frequency electromagnetic field.”). Functional recitations in an apparatus claim are given weight in that the corresponding prior art structures must possess the capability of performing the recited function. *See Intel Corp. v. U.S. Int’l Trade Comm’n*, 946 F.2d 821, 832 (Fed. Cir. 1991). The Examiner’s finding that the claimed and prior art devices are structurally the same is sufficient to support a finding that the prior art device necessarily would have been capable of freeing toxins from blood proteins. *See* Spec. 2:29–31 (“If high-frequency electromagnetic fields are used during dialysis, the amount of protein-bound uraemic toxins can be greatly reduced.”).

[W]here the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on. *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997) (quoting *In re Swinehart*, 439 F.2d 210, 213 (C.C.P.A.1971)); *see also In re Kubin*, 561 F.3d 1351, 1357 (Fed. Cir. 2009) (“Even if no prior art of record explicitly discusses the . . . [limitation], [Appellants’] application itself instructs that [the limitation] is not an additional requirement imposed by the claims on the [claimed invention], but rather a property necessarily present in [the claimed invention].”).

The Appellant contends that the Specification Examples evidence unexpected results. Ans. 43. “[W]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected

compared with the closest prior art.” *In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991); *see Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364 (Fed. Cir. 2007) (explaining that as long as the Examiner establishes “a reasonable probability of success,” “obviousness cannot be avoided simply by a showing of some degree of unpredictability in the art”).

We agree with the Examiner that the Appellant’s evidence is not persuasive of unexpected results. *See* Ans. 43–44. As explained by the Examiner,

[t]he prior art teaches the use of an electromagnetic field at different frequencies to treat blood, whereas the results of Fig. 2 of the instant application demonstrate the difference between applying a 1–20 MHz high-frequency electromagnetic field and NOT applying an electromagnetic field Furthermore, the results of Fig. 2 do not demonstrate that applying a high-frequency electromagnetic field results in substantial improvements in freeing toxins from proteins in blood versus applying an electromagnetic field which is outside of the claimed range of frequency.

Ans. 44.

In traversing above-listed grounds of rejection 2–10, the Appellant relies on the same arguments discussed above, adding that the additional references applied to these rejections fail to cure the deficiencies in the combination of Castle, Dobbeleer, and Kienman. *See* Appeal Br. 11–13 (arguing that the additional references do not disclose “removing protein-bound toxins from the blood of patients”).⁶ Having considered the Appellant’s and the Examiner’s respective arguments and evidence,

⁶ In rejections 6–10, the Examiner relies on European Commission for an express teaching that electromagnetic fields have a very wide range of frequencies, including very high frequencies. *See* Final Act. 31.

including the Appellant’s evidence of unexpected results, we determine that a preponderance of the evidence favors the Examiner’s conclusion of obviousness as to claims 1–5, 8–12, and 14–16. Accordingly, we sustain all grounds of rejection under 35 U.S.C. § 103(a) for the reasons discussed above, and based on the Examiner’s fact finding and reasoning in the Final Office Action and the Answer.

As to the double-patenting rejections, the Examiner states that these “rejections are held in abeyance pending an indication of allowable subject matter” (Ans. 45) based on the Appellant’s statement that it “will submit a terminal disclaimer” “[i]f the other rejections are reversed” (Appeal Br. 14). Accordingly, we do not reach these grounds of rejection.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–5, 8, 10	103(a)	Castle, Dobbeleer, Kienman	1–5, 8, 10	
9, 14, 15	103(a)	Castle, Dobbeleer, Kienman, Vallee	9, 14, 15	
11	103(a)	Castle, Dobbeleer, Kienman, Kutushov	11	
12	103(a)	Castle, Dobbeleer, Kienman, Schäl	12	
16	103(a)	Castle, Dobbeleer, Kienman, Arnold	16	
1–5, 8, 10	103(a)	Castle, Dobbeleer, European Commission, Kienman	1–5, 8, 10	
9, 14, 15	103(a)	Castle, Dobbeleer, European Commission, Kienman, Vallee	9, 14, 15	

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
11	103(a)	Castle, Dobbeleer, European Commission, Kienman, Kutushov	11	
12	103(a)	Castle, Dobbeleer, European Commission, Kienman, Schäl	12	
16	103(a)	Castle, Dobbeleer, European Commission, Kienman, Arnold	16	
1, 2, 10, 16		Nonstatutory double patenting—US 9,682,181, Castle, Dobbeleer ⁷		
3–5		Nonstatutory double patenting—US 9,682,181, Castle, Dobbeleer, Kienman		
9, 14, 15		Nonstatutory double patenting—US 9,682,181, Castle, Dobbeleer, Vallee		
11		Nonstatutory double patenting—US 9,682,181, Castle, Dobbeleer, Kutushov		
12		Nonstatutory double patenting—US 9,682,181, Castle, Dobbeleer, Schäl		
Overall Outcome:			1–5, 8–12, 14–16	

⁷ As explained above, we do not reach the nonstatutory double patenting rejections.

Appeal 2019-005958
Application 14/130,989

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).

AFFIRMED