



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.
13/239,447	09/22/2011	David A. Barclay	1700.184US2	2915
118935	7590	11/01/2016	EXAMINER	
Parsons Summa 15801 Brixham Hill Avenue Suite 550 Charlotte, NC 28277			RAPHAEL, COLLEEN M	
			ART UNIT	PAPER NUMBER
			1756	
			MAIL DATE	DELIVERY MODE
			11/01/2016	PAPER

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.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID A. BARCLAY, JOSEPH J. LAMBERT,
WILLIAM E. JENNINGS, and DAVID L. HERMAN

Appeal 2014-009347
Application 13/239,447
Technology Center 1700

Before MICHAEL P. COLAIANNI, WESLEY B. DERRICK, and
MONTÉ T. SQUIRE, *Administrative Patent Judges*.

SQUIRE, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellants² appeal the Examiner's final rejection of claims 1–15.
35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b). An oral
hearing was held on October 18, 2016.

We AFFIRM.

¹ In this decision, we refer to the Final Office Action appealed from, mailed July 31, 2013 (“Final Act.”), the Appeal Brief dated December 31, 2013 (“App. Br.”), the Examiner’s Answer to the Appeal Brief dated July 1, 2014 (“Ans.”), and the Reply Brief dated September 2, 2014 (“Reply Br.”).

² Appellants identify CEM Corporation as the Real Party in Interest.
App. Br. 1.

The Claimed Invention

Appellants' disclosure relates to a method of microwave assisted chemical reactions carried out at elevated temperatures and elevated pressures. Spec. ¶ 12; Abstract. The claimed method includes the steps of applying microwave radiation to a sample in a sealed vessel while measuring the temperature of the sample and measuring the pressure generated inside the vessel and until the measured pressure reaches a designated set point; opening the vessel to release gases until the measured pressure inside the vessel reaches a lower designated set point; closing the vessel; and repeating the steps of opening the vessel at designated pressure set points and closing the vessel at designated pressure set points until the sample reaction reaches a designated high temperature. *Id.* Claim 1 is representative of the claims on appeal and is reproduced below from the Claims Appendix to the Appeal Brief (App. Br. 11):

1. A method of high pressure microwave assisted chemistry comprising:
 - applying microwave radiation to a sample in a sealed vessel while measuring the temperature of the sample and measuring the pressure generated inside the vessel and until the measured pressure reaches a designated set point above atmospheric pressure;
 - opening the vessel to release gases until the measured pressure inside the vessel reaches a lower designated set point that is also above atmospheric pressure;
 - closing the vessel while the pressure inside the vessel remains above atmospheric pressure; and;
 - repeating the steps of opening the vessel at designated pressure set points above atmospheric pressure and closing the vessel at designated pressure set points above atmospheric pressure, and applying microwave radiation to the sample until the sample reaction reaches a designated temperature.

The References

The Examiner relies on the following references as evidence in rejecting the claims on appeal:

Dalquist et al., (hereinafter “Dalquist”)	US 4,796,776	Jan. 10, 1989
McCullough et al., (hereinafter “McCullough”)	US 6,097,015	Aug. 1, 2000
Manganini et al., (hereinafter “Manganini”)	US 6,803,237 B2	Oct. 12, 2004
Hope et al., (hereinafter “Hope”)	US 6,843,266 B2	Jan. 18, 2005
Florkey et al., (hereinafter “Florkey”)	US 6,984,359 B2	Jan. 10, 2006
Jennings	US 7,144,739 B2	Dec. 5, 2006
Hargett, Jr. et al., (hereinafter “’633 Patent”)	US 7,816,633 B2	Oct. 19, 2010

The Rejections

On appeal, the Examiner maintains the following rejections³:

1. Claims 1–8 and 12–14 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over McCullough in view of Manganini, and further in view of Florkey. Ans. 3; Final Act. 3.
2. Claims 9, 10, and 15 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over McCullough, Manganini, and Florkey as

³ Rejections 5, 6, and 7 listed below were designated by the Examiner as New Grounds of Rejection in the Answer and not originally included as rejections in the Final Office Action. *See* Ans. 9–12.

applied to claims 1 and 7 above, and further in view of Jennings. Ans. 5;
Final Act. 5.

3. Claim 11 stands rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over McCullough, Manganini, and Florkey as applied to claim 1 above, and further in view of Hope. Ans. 6; Final Act. 6.

4. Claims 1–15 stand rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1–9 of the '633 Patent in view of McCullough. Ans. 8; Final Act. 8.

5. Claims 1–8 and 12–14 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over McCullough in view of Manganini, and further in view of Dalquist. Ans. 9.

6. Claims 9, 10, and 15 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over McCullough, Manganini, and Dalquist as applied to claims 1 and 7 above, and further in view of Jennings. Ans. 11.

7. Claim 11 stands rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over McCullough, Manganini, and Dalquist as applied to claim 1 above, and further in view of Hope. Ans. 12.

8. Claims 1–15 stand rejected under 35 U.S.C. § 103(a) or pre-AIA 35 U.S.C. § 112, first paragraph, as being unpatentable for non-enablement. Final Act. 2.

OPINION

Having considered the respective positions advanced by the Examiner and Appellants in light of this appeal record, including Appellants' argument

at the oral hearing,⁴ we affirm the Examiner's rejections for the reasons set forth in the Answer to the Appeal Brief and Final Office Action appealed from, which we adopt as our own. We highlight and address specific findings and arguments for emphasis as follows.

Rejection 1

Appellants argue claims 1–8 and 12–14 as a group. We select claim 1 as representative of this group, and the remaining claims stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that the combination of McCullough, Manganini, and Florkey suggests a method of high pressure microwave assisted chemistry satisfying all of the limitations of claim 1 and concludes that the combination would have rendered claim 1 obvious. Ans. 3, 4. The Examiner finds that McCullough discloses the majority of claim 1's limitations, but that it does not "explicitly teach repeating the steps of opening the vessel at designated pressure set points and closing the vessel at designated pressure set points" and that the "set points are above atmospheric pressure," as recited in the claim. *Id.* (citing McCullough, col. 11, ll. 28–60, 62–67). The Examiner, however, relies on Manganini and Florkey, respectively, for disclosing these limitations. *Id.*

In particular, the Examiner finds that Manganini teaches "a method of pressurized microwave heating of a sample, similar to McCullough" and that includes "repeating [the] steps of opening and closing a microwave reaction

⁴ An Appellant may only rely on, and we only consider, argument that has been relied upon in the Appeal Brief or Reply Brief. 37 C.F.R. § 41.47(e)(1).

vessel.” Ans. 3 (citing Manganini, col. 8, ll. 44–65, Table 1). The Examiner finds further that Manganini teaches that the opening and closing steps allow for “introduction and removal of a variety of sample treatment solutions for extraction and fractionation analysis of target analytes.” *Id.* (citing Manganini, col. 2, ll. 29–38).

The Examiner also finds that, similar to both McCullough and Manganini, Florkey teaches “a method for treating material under pressure and heat . . . with a controller to operate and purge air at pressure greater than atmospheric” and that the method “allows control of the pressure to maximum and minimum limits that meet sterilization standards.” Ans. 3 (citing Florkey, col. 9, ll. 6–33, col. 10, ll. 12–27).

Based on the above findings regarding the teachings of the cited references, the Examiner concludes that:

it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of McCullough . . . by repeating steps of opening and closing a microwave reaction vessel as taught by Manganini . . . because this would allow introduction and removal of a variety of sample treatment solutions for extraction and fractionation analysis of target analytes . . . and to further modify the method of McCullough . . . and Manganini . . . by using set points above atmospheric pressure, as taught by Florkey . . . because this would allow control of the pressure to maximum and minimum limits that meet sterilization standards.

Ans. 4 (citing Manganini, col. 2, ll. 29–38; Florkey, col. 10, ll. 12–27).

Appellants primarily argue that the Examiner’s rejection should be reversed because the cited prior art references are incompatible with each other and the claimed invention. App. Br. 5–9. Appellants argue that McCullough teaches a method that is incompatible with the claimed invention because McCullough “specifically seeks to avoid the repeated

opening and closing steps recited in [claim 1]” and “requires a single closing step (before sterilization) and a single opening step (after sterilization).” *Id.* at 6. Appellants contend that physically “opening McCullough’s vessel before sterilization is complete would both preclude sterilization and potentially contaminate the ambient surroundings.” *Id.* at 5.

Appellants argue that Manganini is incompatible with McCullough because “McCullough requires a single cycle during which the vessel must remain closed until sterilization takes place” and the repeated extraction steps of Manganini “would frustrate McCullough’s purpose.” App. Br. 7. Appellants further argue that Manganini is incompatible with the claimed invention because Manganini “requires a return to atmospheric pressure and room temperature at the end of every extraction . . . and lacks any suggestion that maintaining above-atmospheric pressures when opening and closing a vessel is necessary or even advantageous.” App. Br. 7.

Appellants contend that Florkey “fails to cure the logical problems of the McCullough-Manganini combination” and does not disclose the “set points above atmospheric pressure” limitations recited in claim 1, and that the combination of McCullough, Manganini, and Florkey “produces an inoperative result.” App. Br. 7, 8.

We are not persuaded by Appellants’ arguments because they are premised on the physical, bodily incorporation of McCullough and Manganini. The test, however, for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Rather, the test is what the combined teachings of those references would have suggested to one of ordinary skill in the art. *Id.* at 425; *see also In re*

Nievelt, 482 F.2d 965, 968 (CCPA 1973) (“Combining the teachings of references does not involve an ability to combine their specific structures.”); *In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”).

Appellants’ frustration of purpose argument is unpersuasive because McCullough expressly indicates that its disclosed device and method are not limited to sterilization and/or treatment of medical waste; rather, the disclosures are more generally applicable to using microwave energy to heat materials under pressure. *See* McCullough, Abstract (disclosing “a novel method and apparatus for . . . otherwise heating materials, objects, liquids and the like under pressure”); col. 1, ll. 14–16 (“The present invention relates to a novel method and apparatus for use of microwave energy to make a pressure heating vessel.”). Appellants do not persuasively explain or direct us to any evidence in the record that the general purpose of using microwave energy to heat materials under pressure is frustrated when combined with Manganini’s teachings regarding a method of pressurized microwave heating of a sample and the steps of opening and closing a microwave reaction vessel.

We also do not find Appellants’ argument persuasive because a reference is good for all that it teaches to a person of ordinary skill in the art, and not only for what it sets forth as preferred. *See, e.g., Merck & Co., Inc. v. Biocraft Labs, Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989); *see also* McCullough, col. 1, ll. 16–18 (“In a preferred embodiment, the invention relates to a novel apparatus and method for sterilizing medical waste.”). Accordingly, McCullough’s teachings regarding a particular preference does

not take away from its broad disclosure regarding using microwave energy to heat materials under pressure and all that it teaches, including the reasonable inferences that would be drawn by the skilled artisan. *See In re Preda*, 401 F.2d 825, 826 (CCPA 1968).

Appellants' argument is further undercut because, as the Examiner correctly points out (Ans. 13, 14), both McCullough and Manganini are directed to methods of operating microwave vessels (McCullough, Abstract, col. 3, ll. 7–9; Manganini, col. 2, ll. 29–38) and both McCullough and Florkey are in the field of sterilization at pressure (McCullough, Abstract, col. 11, ll. 28–67; Manganini, col. 8, ll. 44–65, Table 1). *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (explaining that prior art references may be analogous if they involve the “same field of endeavor”).

Moreover, based on the record before us, the Examiner's findings regarding the teachings of the prior art references and reasoning for why one of ordinary skill would have combined these teachings to arrive at Appellants' claimed invention, including all of the limitations of claim 1, are supported by a preponderance of the evidence and based on sound technical reasoning. McCullough, col. 11, ll. 28–60, 62–67; Manganini, col. 8, ll. 44–65, Table 1, col. 2, ll. 29–38; Florkey, col. 9, ll. 6–33, col. 10, ll. 12–27; Ans. 4.

Appellants fail to direct us to sufficient evidence or provide an adequate technical explanation to show why the Examiner's articulated reasoning for combining the teachings of the prior art to arrive at the claimed invention lacks a rational underpinning or is otherwise based on some other reversible error. Appellants' assertions that Florkey fails to cure the logical problems of the McCullough-Manganini combination (App. Br. 7) and that

the combination of McCullough, Manganini, and Florkey produces an inoperative result (*id.* at 8), without more, are conclusory and insufficient to establish reversible error in the Examiner’s analysis and findings in this regard.

Accordingly, for the reasons provided by the Examiner and discussed above, we affirm the Examiner’s rejection of claims 1–8 and 12–14 under pre-AIA 35 U.S.C. § 103(a) as unpatentable over the combination of McCullough, Manganini, and Florkey.

Rejection 2

In response to this rejection, Appellants do not present arguments for the separate patentability of claims 9, 10, and 15. We select claim 9 as representative, and claims 10 and 15 stand or fall with claim 9. 37 C.F.R. § 41.37(c)(1)(iv). Claim 9 depends indirectly from claim 1 and adds the limitation: “comprising moderating the application of microwave energy in response to the measured temperature.” App. Br. 12 (Claims App’x).

The Examiner finds that the combination of McCullough, Manganini, Florkey, and Jennings suggests all of claim 9’s limitations and concludes that the combination would have rendered claim 9 obvious. Ans. 5, 6 (citing McCullough, col. 11, ll. 28–60, 62–67; Manganini, col. 8, ll. 44–65, Table 1, col. 2, ll. 29–38; Florkey, col. 9, ll. 6–33, col. 10, ll. 12–27; Jennings, col. 7, ll. 40–52, col. 8, ll. 5–67).

Appellants argue that this rejection should be reversed because Jennings does not “cure the functional incompatibility of the McCullough, Manganini and Florkey combination.” App. Br. 9. We do not find Appellants’ argument persuasive for the same reasons discussed above in affirming the Examiner’s Rejection 1.

Accordingly, we affirm the Examiner's rejection of claims 9, 10, and 15 under pre-AIA 35 U.S.C. § 103(a) as unpatentable over the combination of McCullough, Manganini, Florkey, and Jennings.

Rejection 3

Claim 11 depends from claim 1 and adds the limitation "wherein the step of opening the vessel comprises lifting a cap." App. Br. 12 (Claims App'x). The Examiner finds that the combination of McCullough, Manganini, Florkey, and Hope suggests all of claim 11's limitations and concludes that the combination would have rendered claim 11 obvious. Ans. 6, 7 (citing McCullough, col. 11, ll. 28–60, 62–67; Manganini, col. 8, ll. 44–65, Table 1, col. 2, ll. 29–38; Florkey, col. 9, ll. 6–33, col. 10, ll. 12–27; Hope, col. 1, ll. 34–51, col. 9, ll. 1–8, Fig. 10).

Appellants argue that this rejection should be reversed because Hope's disclosures "fail to cure the inoperative nature of the McCullough, Manganini and Florkey combination." App. Br. 9, 10. We do not find Appellants' argument persuasive for the same reasons discussed above in affirming the Examiner's Rejection 1.

Accordingly, we affirm the Examiner's rejection of claim 11 under pre-AIA 35 U.S.C. § 103(a) as unpatentable over the combination of McCullough, Manganini, Florkey, and Hope.

Rejection 4

With respect to the Examiner's rejection of claims 1–15 for obviousness-type double patenting, *i.e.*, Rejection 4 stated above (Ans. 8), the Appellants offer no substantive argument on the merits and do not address the rejection in either the Appeal Brief or the Reply Brief.

Accordingly, because the Examiner’s double patenting rejection has not been withdrawn and the Appellants offer no substantive argument on the merits, we summarily affirm the rejection. *Cf. Hyatt v. Dudas*, 551 F.3d 1307, 1314 (Fed. Cir. 2008); *Ex parte Frye*, Appeal No. 2009-006013, 2010 WL 889747, *4 (BPAI 2010) (precedential) (“If an appellant fails to present arguments on a particular issue — or, more broadly, on a particular rejection — the Board will not, as a general matter, unilaterally review those uncontested aspects of the rejection.”) (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011)).

Rejections 5, 6, and 7

In response to the Examiner’s Rejection 5, stated above (Ans. 9), Appellants present arguments for the patentability of only claim 1 and based solely on the combination of McCullough, Manganini, and Dalquist.⁵ We, therefore, limit our discussion to claim 1 and claims 2–8 and 12–14 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that the combination of McCullough, Manganini, and Dalquist suggests all of the limitations of claim 1 and concludes that the combination would have rendered claim 1 obvious. Ans. 9, 10. The Examiner finds that the combination of McCullough and Manganini suggests nearly all of claim 1’s limitations except that it does not “explicitly

⁵ Because the Examiner’s Rejections 6 and 7 are also based primarily on the combination of McCullough, Manganini, and Dalquist as applied to claim 1 (*see* Ans. 9, 11, 12) and Appellants do not present separate arguments in response to these rejections in the Reply Brief, we address them together with Rejection 5 and note that these rejections each stand or fall with Rejection 5 as applied to claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

teach that the set points are above atmospheric pressure.” *Id.* at 9. The Examiner, however, relies on Dalquist for teaching this missing limitation. *Id.*

In particular, the Examiner finds that Dalquist teaches “a method for treating material with microwaves under pressure” and “using a controller to operate and purge air at pressure greater than atmospheric.” Ans. 9 (citing Dalquist, Fig. 9, parts 108, and 38, col. 7, ll. 27–43, Fig. 10, parts 38, 34, 32, and 64, col. 8, ll. 5–10). The Examiner finds further that Dalquist teaches that the method allows steam and vapor to escape and, in particular, “as the cover is opened from the locked position, rapid escape of steam and vapor is permitted to protect a user who mistakenly opens the microwave pressure cooker before pressure has subsided.” *Id.* (citing Dalquist, col. 7, ll. 34–37, col. 2, ll. 54–67).

Based on the above findings, the Examiner concludes that:

it would have been obvious, to one of ordinary skill in the art at the time of the invention, to modify the method of McCullough . . . by repeating steps of opening and closing a microwave reaction vessel as taught by Manganini . . . because this would allow introduction and removal of a variety of sample treatment solutions for extraction and fractionation analysis of target analytes . . . and to further modify the method of [McCullough and Manganini] by using set points above atmospheric pressure, as taught by Dalquist . . . because this would allow escape of steam and vapor . . . and as the cover is opened from the locked position, rapid escape of steam and vapor is permitted to protect a user who mistakenly opens the microwave pressure cooker before pressure has subsided.

Ans. 10 (citing Manganini, col. 2, ll. 29–38; Dalquist, col. 7, ll. 34–37, col. 2, ll. 54–67).

In response to this rejection, Appellants repeat largely the same arguments presented above in response to Rejection 1. In particular, Appellants argue that the Examiner's new grounds of rejection should be reversed because "(1) the references . . . are functionally incompatible with one another or with the claimed invention; and (2) even when the references are combined, they neither disclose nor suggest the claimed invention." Reply Br. 4. Appellants also argue that Dalquist's pressure relief structure "defines a single pressure release set point that cannot and does not carry out the steps recited in Claim 1." *Id.*

We are not persuaded by Appellants' arguments based on the factual findings and analysis provided by the Examiner at pages 9–13 of the Answer and for the same reasons previously discussed above in affirming the Examiner's Rejection 1. Accordingly, we affirm the Examiner's Rejections 5, 6, and 7 stated above.

Rejection 8

Claims 1–15 stand rejected under § 112, first paragraph for non-enablement. Final Act. 2. In particular, the Examiner concludes that the Specification "does not reasonably provide enablement for maintaining the pressure at above atmospheric pressure during the entire opening and closing process" and that it is "unclear how the pressure is maintained above atmospheric pressure during the entire opening and closing process if the entirety of the sealed vessel is opened to the atmosphere." *Id.*

Appellants offer no substantive argument on the merits and do not address this rejection in either the Appeal Brief or the Reply Brief. Accordingly, we summarily affirm the rejection. *Frye*, 2010 WL 889747 at *4.

Appeal 2014-009347
Application 13/239,447

DECISION/ORDER

The Examiner's rejections of claims 1–15 are affirmed.

It is ordered that the Examiner's decision is affirmed.

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