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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT E. MCGOWEN

Appeal 2019-006060
Application 14/996,093
Technology Center 1600

Before JEFFREY N. FREDMAN, ELIZABETH A. LAVIER, and
MICHAEL A. VALEK, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal^{1,2} under 35 U.S.C. § 134 involving claims to a cotton plant variety. The Examiner rejected the claims as obvious and on the ground of obviousness-type double patenting. 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 Bayer Crop Sciences, Inc., the parent company of assignee Monsanto Technology LLC. (*see* App. Br. 1).

² We have considered and refer to the Specification of Jan. 14, 2016 (“Spec.”); Final Action of June 13, 2018 (“Final Act.”); Appeal Brief of Feb. 3, 2019 (“Appeal Br.”); Examiner’s Answer of June 10, 2019 (“Ans.”); and Reply Brief of Aug. 12, 2019 (“Reply Br.”).

Statement of the Case

Background

“The goal of a commercial cotton breeding program is to develop new, unique and superior cotton varieties. In cotton, important traits include higher fiber (lint) yield, earlier maturity, improved fiber quality, resistance to diseases and insects, tolerance to drought and heat, and improved agronomic traits” (Spec. 2:8–11). “[T]he invention relates to the novel cotton variety 14R913B2XF” (Spec. 2:5–6).

The Claims

Claims 1–22 are on appeal. Independent claim 1 is representative and reads as follows:

1. A plant of cotton variety 14R913B2XF, wherein a sample of seed of said variety has been deposited under ATCC Accession No. PTA-123148.

The Issues

- A. The Examiner rejected claims 1–22 under 35 U.S.C. § 103(a) as obvious over McGowen ’324³ and Brinker⁴ (Final Act. 2–9).
- B. The Examiner rejected claims 1–22 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12–15 of McGowen ’484 and Brinker (Final Act. 10–11).
- A. *35 U.S.C. § 103(a) as obvious over McGowen ’324 and Brinker*

The Examiner finds the Specification teaches “cotton variety 14R913B2XF was developed by introducing transgene event MON 88701 using cotton variety 07W799B2R2 as a recurrent parental line, backcrossing

³ McGowen ’324, US 2012/0304324 A1, published Nov. 29, 2012.

⁴ Brinker et al., US 2012/0255050 A1, published Oct. 4, 2012.

to the recurrent parental line at least three times” (Final Act. 2). The Examiner finds “McGowen teaches cotton variety 07W799B2R2” and teaches using this variety “to introduce a single locus converted plant using art routine methods” (*id.* at 3). The Examiner finds that routine methods including “backcrossing to introduce a genetic locus [were] routine in the art” (*id.* at 3). The Examiner acknowledges that McGowen “does not teach cotton variety 14R913B2XF or transgene event MON 88701” (*Id.*).

The Examiner finds Brinker teaches “a cotton plant comprising transgene event MON 88701” and that the ordinary artisan “could combine event MON 88701 with events MON 88913 and MON 15985” (Final Act. 3). The Examiner finds the combination obvious because

Brinker teaches that one of ordinary skill in the art would want to convert a cotton plant having MON 88913 and 15985 transgenes (such as McGowan’s cotton plant) with a cotton plant comprising the MON 88701 event using standard methods such as those taught by McGowan to introduce a single locus conversion comprising a transgene.

(Ans. 4).

The issues with respect to this rejection are:

(i) Does a preponderance of the evidence of record support the Examiner’s conclusion that the combination of McGowen and Brinker render claim 1 *prima facie* obvious?

(ii) If so, has Appellant provided evidence of unexpected results that outweighs the evidence supporting the *prima facie* case of obviousness?

Findings of Fact

1. McGowen ’324 teaches:

a continuing goal of plant breeders is to develop stable, high yielding cotton varieties that are agronomically sound. The

reasons for this goal are obviously to maximize the amount and quality of the fiber produced on the land used and to supply fiber, oil and food for animals and humans. To accomplish this goal, the cotton breeder must select and develop plants that have the traits that result in superior cultivars.

(McGowen '324 ¶ 51)

2. McGowen '324 teaches “the invention relates to the novel cotton variety 10R013B2R2” (McGowen '324 ¶ 3).

3. McGowen '324 teaches “07W799B2R2 was given the pre-commercial name 10R013B2R2 in 2010” (McGowen '324 ¶ 21)

4. McGowen '324 teaches “[p]opular selection methods commonly include pedigree selection, modified pedigree selection, mass selection, recurrent selection and backcrossing” (McGowen '324 ¶ 35).

McGowen '324 further teaches:

Plants which are developed by a plant breeding technique called backcrossing wherein essentially all of the desired morphological and physiological characteristics of a variety are recovered in addition to the characteristics conferred by the single locus transferred into the variety via the backcrossing technique. A single locus may comprise one gene, or in the case of transgenic plants, one or more transgenes integrated into the host genome at a single site (locus).

(McGowen '324 ¶ 144).

5. McGowen '324 teaches one loci used for providing improved traits term “MON 15985 [that] produces the Cry1Ac and Cry2Ab proteins conferring protection from feeding damage caused by lepidopteran insect pests” (McGowen '324 ¶ 18).

6. McGowen '324 teaches another loci for improved traits, “MON 88913 produces a 5-enolpyruvylshikimate-3-phosphate synthase protein

from *Agrobacterium* sp. Strain CP4 (CP4 EPSPS), which confers tolerance to glyphosate, the active ingredient in the Roundup® family of agricultural herbicides” (McGowen ’324 ¶ 18).

7. McGowen ’324 teaches that during the breeding process, “[s]elections were based on lint yield, lint percent, and acceptable fiber qualities” (McGowen ’324 ¶ 20).

8. McGowen ’324 teaches that:

In selecting a second plant to cross with 10R013B2R2 for the purpose of developing novel cotton varieties, it will typically be desired to choose those plants which themselves exhibit one or more selected desirable characteristics. Examples of potentially desired characteristics include ***higher fiber (lint) yield***, earlier maturity, ***improved fiber quality***, resistance to diseases and insects, tolerance to drought and heat, and improved agronomic traits.

(McGowen ’324 ¶ 26; emphasis added). McGowen ’324 specifically teaches “fiber qualities such as strength, fiber length, micronaire, fiber elongation, uniformity of fiber and amount of fiber” (McGowen ’324 ¶ 120).

9. Brinker teaches “Cotton (*Gossypium hirsutum*) is an important crop in many areas of the world, and the methods of biotechnology have been applied to this crop in order to produce cotton with desirable traits. One such desirable trait is herbicide tolerance” (Brinker ¶ 4).

10. Brinker teaches the “invention relates to transgenic *Gossypium hirsutum* event MON 88701. The event exhibits tolerance to dicamba and glufosinate herbicides” (Brinker ¶ 3). Brinker teaches generation “of cotton seed comprising event MON 88701” (Brinker ¶ 101).

11. Brinker teaches:

For example, the ***MON 88701*** containing dicamba and glufosinate tolerant cotton can be crossed with other transgenic

cotton plants to produce a plant having the characteristics of both transgenic parents. One example of this would be a cross of MON 88701 containing dicamba and glufosinate tolerant cotton with a plant having one or more additional traits such as herbicide tolerance (e.g. cotton event MON 1445 or cotton event MON 88913) and/or insect control (e.g. cotton event MON 15985, MON 757, or MON 531), resulting in a progeny plant or seed that is tolerant to dicamba and glufosinate and has at least one or more additional traits. Back-crossing to a parental plant and out-crossing with a non-transgenic plant are also contemplated.

(Brinker ¶ 57; emphasis added).

12. Table 1 from Exhibit A of the Declaration of Dr. Marymar Goncalves Butruille⁵ is reproduced below:

Table 1. Head-to-Head Performance Comparison

Entries Compared	YLD_BE	LP	MIC	LNTH	UNIF	STRN	EL	PHT	LFHAR	FMATR	SFC	BOP
14R913B2XF	1,733	39.74	4.66	1.18	84.74	32.7	9.78	35.5	4.5	84.73	6.63	62
10R013B2R2	1,745	39.57	4.84	1.19	85.02	32.63	9.38	35.9	5	85.49	6.4	64
Deviation	-12.21	0.17	-0.18	-0.01	-0.29	0.07	0.4	-0.42	-0.45	-0.76	0.24	-1.76
Significance			**	+	+		*			**	*	*
# Obs	26	26	15	12	15	15	15	20	7	15	15	19
Years	2	2	2	2	2	2	2	2	2	2	2	2
Win Percent	35	62	93	33	40	40	86	65	100	0	27	71
Test Mean	1,709	41.6	4.68	1.16	84.55	31.45	9.29	37.4	3.6	85.06	6.97	58

***, "**," and "+" indicate significance at $P \leq 0.01$, $P \leq 0.05$, and $P \leq 0.10$, respectively.

Observations:

Yield Best Estimate YLD_BE
 Percent Lint LP
 Micronaire MIC
 Fiber Length LNTH
 Uniformity Index UNIF
 Fiber Strength STRN

Observations:

Elongation EL
 Plant Height PHT
 Leaf Hairs - Trichomes LFHAR
 Fibre Maturity Ratio FMATR
 Short Fiber Content SFC
 Bolls Open Percent BOP

⁵ Declaration of Dr. Marymar Goncalves Butruille, dated Sept. 28, 2017.

Table 1 shows a comparison of twelve traits of two different cotton plants, 14R913B2XF, which is the claimed variety, and 10R013B2R2, which is a variety disclosed by McGowan.

Principles of Law

Prima facie obviousness can be rebutted by presenting evidence of secondary considerations and when such evidence is submitted, all of the evidence must be considered anew. *In re Piasecki*, 745 F.2d 1468, 1472–1473 (Fed. Cir. 1984).

This court and its predecessors have long held, however, that even though applicant’s modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art, unless the claimed ranges “produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art.

In re Huang, 100 F.3d 135, 139 (Fed. Cir. 1996).

Analysis

Prima facie obviousness

We adopt the Examiner’s findings of fact and reasoning regarding the scope and content of the prior art (Final Act. 2–9; FF 1–11) and agree that claim 1 is rendered obvious by McGowen ’324 and Brinker.

The Specification teaches that the claimed plant was made by crossing a donor parent containing the gene events MON 15985 for lepidopteron tolerance and MON 88913 for glyphosate tolerance with another parent containing the gene event MON 88701 for dicamba and glufosinate tolerance (*see* Spec. 5). The Specification teaches the resulting plants were backcrossed along with using selection for events of interest (*id.*).

McGowen '324 teaches breeding of cotton plants (FF 1), including backcross breeding (FF 4). McGowen '324 teaches including two desirable loci in the cotton plants, MON15985, that provides protection against insect pests (FF 5) and MON 88913 that provides pesticide tolerance (FF 6). McGowen '324 teaches selection for desirable cotton properties (FF 7–8).

Brinker teaches a cotton plant with MON 88701 (FF 10). Brinker further teaches “a cross of MON 88701 containing dicamba and glufosinate tolerant cotton with a plant having one or more additional traits such as herbicide tolerance (e.g. cotton event MON 1445 or cotton event MON 88913) and/or insect control (e.g. cotton event MON 15985, MON 757, or MON 531)” (FF 11; emphasis added).

We agree with the Examiner that an ordinary artisan would have found it obvious to perform the cross suggested by Brinker “because it resulting in a progeny plant or seed that is tolerant to dicamba and glufosinate and has at least one or more additional traits” (FF 11). An ordinary artisan would have found back-crossing the resultant plants obvious both because McGowan suggests back-crossing (FF 4) and Brinker also suggests “[b]ack-crossing to a parental plant and out-crossing with a non-transgenic plant are also contemplated” (FF 11).

Unexpected Results

Appellant

requests reversal of the rejection because (A) the evidence of record establishes that non-obvious differences that are of both statistical and practical significance exist between the claimed invention and the combination of cited references; (B) those differences would have been unexpected to one of ordinary skill in the art; (C) those differences are equal to or outweigh any expected properties of the claimed invention; and (D) one of

ordinary skill in the art would have had no reasonable expectation of success in arriving at the claimed invention based on the cited art and knowledge of those of ordinary skill in the art.

(Appeal Br. 2–3). Because the reasonable expectation of success issue is linked to the asserted unexpected results, we will address these arguments (A)–(D) in order.

Appellant contends, as to argument (A), that the Declaration of Dr. M. Butruille⁶ “establishes that the claimed and cited varieties can be unambiguously distinguished at least based upon differences in the following industrial performance characteristics: micronaire, fiber length, uniformity index, elongation, fiber maturity ratio, short fiber content, and bolls open percent” (Appeal Br. 3). Appellant further cites to the Dr. D. Butruille Declaration, which states the “performance differences between the claimed and cited variety that were identified in Dr. [M.] Butruille’s declaration are of meaningful, practical agronomic significance to cotton breeders. The hypothesis testing described in that same declaration accurately identifies these differences as statistically significant” (*id.* at 4; citing Dr. D. Butruille Decl. ¶ 15).

Appellant further contends, “[o]ne of ordinary skill in the art would unquestionably recognize that this type of analysis is capable of accurately identifying intrinsic industrial performance differences that exist between the claimed and cited varieties” (Appeal Br. 6). Appellant cites to the Dr. D. Butruille Declaration, which states “the performance trials detailed by Dr. [M.] Butruille were well-controlled, including for environmental factors, and

⁶ Declaration of Dr. David Butruille, dated Apr. 20, 2018.

well-sampled. I therefore conclude, as did Dr. [M.] Butruille, that the data generated from the head-to-head performance trials reflect the intrinsic morphology and physiology of the claimed and cited varieties” (*id.*, citing Dr. D. Butruille Decl. ¶ 12).

Appellant contends, as to argument (B), “[e]ach one of the seven performance differences that achieved statistical significance is therefore a discrete point of evidence that strongly rejects this null hypothesis, and thus objectively demonstrates the degree to which these two varieties differ is unexpected” (Appeal Br. 9). Appellant further contends “a general expectation that plants of the cited variety will differ morphologically and/or physiologically from progeny plants derived therefrom is not sufficient to conclude that the evidence presented by Dr. M. Butruille would be expected by one of ordinary skill in the art” (*id.* at 11).

Appellant contends, as to argument (C), that

Table 2 of the Specification provides numerous examples of head-to-head performance comparisons between the instant cotton variety and other distinct cotton varieties. . . . one of ordinary skill in the art would readily appreciate the practical significance and industrial importance of the performance differences that exist between the claimed and cited varieties.

(Appeal Br. 13).

We do not find these arguments (A)–(C) persuasive for several reasons. First, *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1378 (Fed. Cri. 2019) states that a Patent Owner “will bear the burden of proving that the evidence of secondary considerations is attributable to the claimed combination of [features], as opposed to, for example, prior art features in isolation or unclaimed features.” It is reasonable to impose at least the same burden on a Patent Applicant to demonstrate a nexus between the asserted

unexpected results and claimed product, particularly as MPEP 716.01(b) explains that this nexus is required for such evidence to be of probative value.

While Dr. D. Butruille does state that the variations were of “meaningful, practical agronomic significance” (D. Butruille Decl. ¶ 15), neither the Declarants nor Appellant provides details or explanation of whether the differences disclosed in Table 1 of the M. Butruille Declaration or Table 2 of the Specification were differences of degree or kind. *See In re Huang*, 100 F.3d 135, 139 (Fed.Cir.1996) (holding that claimed ranges must “produce a new and unexpected result which is different in kind and not merely in degree from results of the prior art”). In *Harris*, the Court explained that a “32–43% increase in stress-rupture life, however, does not represent a ‘difference in kind’ that is required to show unexpected results.” *In re Harris*, 409 F.3d 1339, 1344 (Fed. Cir. 2005).

The differences shown in Table 1 range from 0.08% change in the fiber length (from 1.18 to 1.19) to a 4% change for elongation (from 9.78 to 9.38) with the other changes falling within this range. Similarly, the differences identified as statistically significant in Table 2 of the Specification range from a 0.08 % change for fiber length between 14R913B2XF and DP 1050 B2RF to a 35% change for Leaf Hairs - Trichomes between 14R913B2XF and DP 1050 B2RF (*see* Spec. 11, Table 2). We note, however, that DP 1050 B2RF is not the closest prior art to McGowen.

None of these changes are as significant as the 43% change in *Harris*, which was found insufficient to show a “difference in kind.” *Harris*, 409 F.3d at 1344. And other than bare statements by the Declarants that these

differences are of practical significance, no evidentiary showing is provided demonstrating that these differences represent a “difference in kind” rather than simply a “difference in degree.”

Second, Table 1 in the M. Butruille Declaration recognizes that the prior art cotton plant of McGowan had cotton that shared all of the features of the claimed cotton plant, differing “with respect to at least micronaire (MIC), fiber length (LNTH), uniformity index (UNIF), elongation (EL), fiber maturity ratio (FMATR), short fiber content (SFC), and bolls open percent (BOP)” (M. Butruille Decl. ¶ 6). However, there is no evidence showing “that the results were unexpected to a significant degree beyond what was already known about the” prior art cotton plant. *Wm. Wrigley Jr. Co v. Cadbury Adams USA LLC*, 683 F.3d 1356, 1363 (Fed. Cir. 2012). *Wrigley* cites with approval that “[i]t would at least be necessary to demonstrate that the improvements observed were greater to an unobvious extent than those which would have been expected from the reference teachings and that those differences were of some significant, practical advantage.” *Id.* (citing *Ex Parte Nutrasweet Co.*, 19 USPQ2d 1586, 1589 (BPAI 1991)).

Similarly, in *In re D’Ancicco*, 439 F.2d 1244, 1063–64, (CCPA 1971), the Appellant provided “affidavits [that] show that appellants’ foams exhibit both greater compressive strength at room temperature and less proportionate reduction in compressive strength at elevated temperatures than do the foams with which they were compared.” However, the Court found that even

[a]ccepting these facts as true, they do not establish that the claimed mixtures were unobvious in view of the prior art. All this record definitely establishes is that appellants' foams have

different properties from the reference foams tested. Whether this difference was ‘striking’ depends, not alone on the numerical ratio of the quantified value of the property being compared, but on the significance of that difference. In this case, there has been no showing that either of the asserted differences between appellants’ foams and the prior art foams is of any practical advantage.

Id. at 1063. The two Butruille Declarations and Table 2 of the Specification share the flaw that *D’Ancicco* found in their cited affidavits, a failure to provide evidence regarding the significance of the differences and a failure to show any specific practical advantage that results from those differences. *See id.* at 1063.

Third, as the Examiner points out, McGowen ’324 recognizes that the advanced testing stage the selection of lint yield, lint percent, fiber quality, are all done for any cotton plant as these are generally agronomically important and present in the breeding history of most cotton varieties. It is also important to note that the instant specification does not call out any trait itself as being significant or unexpected based on the breeding history.

(Ans. 10; *cf.* FF 7, 8). “[W]here an unexpected increase in efficacy is measured by a small percentage, as here, and the evidence indicates that skilled artisans were capable of adjusting the percentage, the result constitutes a difference in degree, not kind.” *Galderma Labs. L.P. v. Tolmar, Inc.*, 737 F.3d 731, 739 (Fed. Cir. 2013). Here, McGowen ’324 teaches that it was known to select for specific cotton traits that were desirable (FF 7, 8) and teaches a variety of selection methods (FF 4), supporting the Examiner’s position that the changes shown in Table 1 of the M. Butruille Declaration constitute a difference in degree, not a difference in kind.

Finally, we agree with the Examiner’s statement that Appellant’s position requires “a policy that anytime a new plant is produced via a locus conversion the resultant plant would be allowable as each and every species would likely have traits that are different from the recurrent parent” (Ans. 8). As acknowledged by Appellant’s declarant, a skilled artisan would recognize that there will be “genomic differences” between plants generated by backcrossing due to variations based on sexual reproduction of the plants. *See* D. Butruille Declaration ¶¶ 9–10. Therefore, a rule that established that statistically significant differences in traits alone, without additional evidence demonstrating that those differences have some practical impact, e.g., on growth or use of the plant, would render any backcrossed plant unobvious *per se*. In *POD-NERS* the Federal Circuit rejected such a rule, finding the Patent Applicant did

not argue that seed coats falling within a particular range of yellow colors have any meaningful impact on the properties of the beans. Nor did he provide objective evidence of secondary considerations that might show nonobviousness—that the particular shades of yellow resulted in substantial sales of the Enola beans, that there was a long need for beans of that color that others were unable to supply, or that others copied the Enola bean.

In re POD-NERS, LLC, 337 Fed. Appx. 901, 903 (Fed. Cir. 2009); *see also In re Eli Lilly & Co.*, 902 F.2d 943, 948 (Fed. Cir. 1990) (“evidence of unobviousness did not outweigh the clear teaching of the prior art” where applicant had “not shown unexpected superiority over the property taught in the prior art”). The same result obtains here, where Appellants identify particular attributes of the claimed cotton plant that differ from the

McGowen cotton plant, but do not identify meaningful impacts of those properties or other secondary considerations attributable to those properties.

Appellant contends, regarding argument (D), that the Examiner did not demonstrate

the required ***reasonable expectation of success of generating a plant with all of the morphological and physiological traits of the claimed variety***. This is because (I) the cited references do not teach or suggest the breeding history of the claimed variety and (II) routine experimentation would not have yielded plants with all of the morphological and physiological characteristics of the claimed variety.

(Appeal Br. 15). Appellant contends “Dr. D. Butruille highlights that a nearly limitless combination of selection and advancing methodologies could have been applied to each generation” (Appeal Br. 18). Appellant concludes “[t]herefore, without knowledge of the breeding history of the claimed variety, it would be nearly impossible to replicate the exact number of backcrosses and specific selection and advancing methodologies that were employed in breeding the claimed variety” (*id.*). Appellant contends “it is improper to find obviousness where what would have been obvious to try would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical” (Appeal Br. 19; *cf. In re O’Farrell*, 853 F.2d 894, 903 (Fed.Cir.1988)).

Appellant contends

it would have required more than routine experimentation to produce a cotton plant with all of the morphological and physiological characteristics of the claimed variety. Appellant notes that an expectation of generating a plant with all the morphological and physiological characteristics of the claimed variety could only have been remotely possible provided that

those morphological and physiological traits were known, and thus involves impermissible hindsight.

(Appeal Br. 20).

We find Appellant’s arguments regarding whether the Examiner’s rejection establishes a reasonable expectation of success unpersuasive. Brinker directly suggests crossing a donor parent containing the gene events MON 15985 for lepidopteron tolerance and MON 88913 for glyphosate tolerance with another parent containing the gene event MON 88701 for dicamba and glufosinate tolerance (FF 11) consistent with the genetic elements disclosed in the Specification (*see* Spec. 5). Both Brinker and McGowen ’324 teaches using techniques such as backcrossing to obtain the desirable cotton plants (FF 4, 11). McGowen ’324 specifically suggests optimizing the plants to obtain “desired characteristics include **higher fiber (lint) yield**, earlier maturity, **improved fiber quality**, resistance to diseases and insects, tolerance to drought and heat, and improved agronomic traits” (FF 8; *cf.* FF 7). McGowen ’324 specifically teaches features that may be optimized include “fiber qualities such as strength, fiber length, micronaire, fiber elongation, uniformity of fiber and amount of fiber” (FF 8).

McGowen ’324’s selections are identical to that in the instant Specification which suggests “desired characteristics include higher fiber (lint) yield, earlier maturity, improved fiber quality, resistance to diseases and insects, tolerance to drought and heat, and improved agronomic traits” (Spec. 13:12–14). “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456 (CCPA 1955). As already discussed, the evidence in Table 1 of the Dr. M. Butruille

Declaration does not establish that the values are anything other than optimized values identified by ordinary selection techniques such as those disclosed by McGowen '324 (FF 4).

Thus, consistent with the teachings of both Brinker and McGowen '324, the ordinary artisan would have had a strong expectation that backcrossing the three genetic events disclosed by Brinker and McGowen '324, along with performing backcrossing with selection for characteristics including higher fiber (lint) yield and improved fiber quality, would have resulted in obtaining an improved cotton plant that included all three genetic events and had improved fiber characteristics (FF 4, 7, 8, 11).

An “obviousness finding was appropriate where the prior art ‘contained detailed enabling methodology for practicing the claimed invention, a suggestion to modify the prior art to practice the claimed invention, and evidence suggesting that it would be successful.’” *In re Kubin*, 561 F.3d 1351, 1360 (Fed. Cir. 2009) (citing *In re O'Farrell*, 853 F.2d 894, 902 (Fed. Cir. 1988)). *Kubin* stated that “[r]esponding to concerns about uncertainty in the prior art influencing the purported success of the claimed combination, this court [in *O'Farrell*] stated: ‘[o]bviousness does not require absolute predictability of success ... all that is required is a reasonable expectation of success.’” *Kubin*, 561 F.3d at 1360 (citing *In re O'Farrell*, 853 F.2d at 903–904).

Here, both Brinker and McGowen '324 provide detailed enabling methodology for selecting for plants with improved fiber qualities including “strength, fiber length, micronaire, fiber elongation, uniformity of fiber and amount of fiber” (FF 8) as well as lint yield and other characteristics (FF 8). Brinker provides a direct suggestion to modify prior art cotton plants (FF 11)

and shows success in generating a desired cotton plant including generation “of cotton seed comprising event MON 88701” (FF 10).

We balance the detailed enabling methodology in Brinker and McGowen ’324, the explicit suggestion in Brinker to create a cotton plant with the specific genetic events, and the evidence showing that such cotton plants can be generated (FF 1–11) with the Declaration of Dr. D. Butruille who states

it would have been improbable for one of ordinary skill to generate a plant with the morphological and physiological characteristics of the claimed variety by merely traditional backcrossing as the Actions appear to suggest. Even with knowledge of the cited variety, cited event, and breeding methods that were routine in the art, there would have been a nearly limitless number of ways in which to introgress the cited event into the cited variety.

(Dr. D. Butruille Decl. ¶ 14; *cf.* Appeal Br. 18).

While Dr. D. Butruille states an opinion regarding the probability of generating a cotton plant with the claimed characteristics solely by backcrossing, Dr. D. Butruille does not support this position with specific evidence. More importantly, Dr. D. Butruille does not address the instant situation, where the Brinker and McGowen ’324 suggest optimizing cotton plant fiber qualities including “strength, fiber length, micronaire, fiber elongation, uniformity of fiber and amount of fiber” as well as lint yield and other characteristics (FF 8). McGowen ’324 is not limited to backcrossing in order to obtain these traits but also teaches that “[p]opular selection methods commonly include pedigree selection, modified pedigree selection, mass selection, [and] recurrent selection” (FF 4). Thus, the evidence suggests that the ordinary artisan had a number of selection methods to

obtain cotton plants with the desired genetic events disclosed by Brinker and the desirable fiber qualities disclosed by McGowen '324. Dr. D. Butruille does not explain why the use of these selection methods as motivated by both prior art references, would not have had a reasonable expectation of success in obtaining a cotton plant with the desired genetic events and fiber qualities. *See In re Am. Acad. Sci. Tech Ctr.*, 367 F.3d 1359, 1370 (Fed. Cir. 2004) (“[T]he Board is entitled to give such weight to declarations as it deems appropriate.”)

Appellant contends that “under 35 U.S.C. § 103 patentability shall not be negated by the manner in which the invention was made. Asserting that a conclusion of obviousness is supported by properties of the manner in which the claimed variety was generated therefore constitutes legal error” (Appeal Br. 10).

We find this argument unpersuasive because the obviousness position is not based on the manner in which the invention was made, but rather based on the disclosures of the prior art and the suggestions of the prior art for the reasons extensively discussed above.

Therefore, as we balance all of the evidence, including the evidence in the Specification relating to the argued secondary considerations, the Declaration evidence, and the evidence supporting Examiner’s prima facie case, we find that a preponderance of the evidence supports the Examiner’s finding that the claims would have been obvious over McGowen '324 and Brinker.

Conclusion of Law

(i) A preponderance of the evidence of record support the Examiner’s conclusion that the combination of McGowen ’324 and Brinker render the claims obvious.

(ii) Appellant has not provided evidence of unexpected results that outweighs the evidence supporting the prima facie case of obviousness.

B. Obviousness-Type Double Patenting

Appellant does not separately argue the obviousness-type double patenting rejection, instead relying upon their arguments to overcome the combination of McGowen ’324 and Brinker discussed above (*see* Appeal Br. 23). We do not find these arguments persuasive for the reasons given above. The Examiner provides sound fact-based reasoning for combining the claims of McGowen ‘484 with Brinker (*see* Final Act. 10–11). Having affirmed the obviousness rejection of the claims over McGowen ’324 and Brinker, we find that the combination of the claims of McGowen ‘484 with Brinker render the rejected claims obvious for the reasons given by the Examiner.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1–22	103	McGowen ’324, Brinker	1–22	
1–22	Obviousness-type Double Patenting	US 9,682,026	1–22	
Overall Outcome			1–22	

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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