

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

IN RE: MATTHEW EARLEY,
Appellant

2020-1816

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. 12/925,235.

Decided: December 14, 2020

MATTHEW EARLEY, Allenwood, NJ, pro se.

MARY L. KELLY, Office of the Solicitor, United States
Patent and Trademark Office, Alexandria, VA, for appellee
Andrei Iancu. Also represented by MICHAEL S. FORMAN,
THOMAS W. KRAUSE, AMY J. NELSON, FARHEENA YASMEEN
RASHEED.

Before PROST, *Chief Judge*, CLEVINGER and TARANTO,
Circuit Judges.

PER CURIAM.

Matthew Earley is the named inventor on U.S. Patent
Application No. 12/925,235 (the '235 application), titled
"Fixed Pitch Wind (or Water) Turbine with Centrifugal

Weight Control (CWC).” The examiner rejected claims 26–29 of the ’235 application for obviousness based on one of Mr. Earley’s prior patents, *i.e.*, U.S. Patent No. 6,949,842 (the ’842 patent), in combination with U.S. Patent No. 3,942,026 (Carter) and U.S. Patent Publication No. 2010/0207396 (Simon). The Patent Trial and Appeal Board affirmed the examiner’s rejections. We affirm the Board.

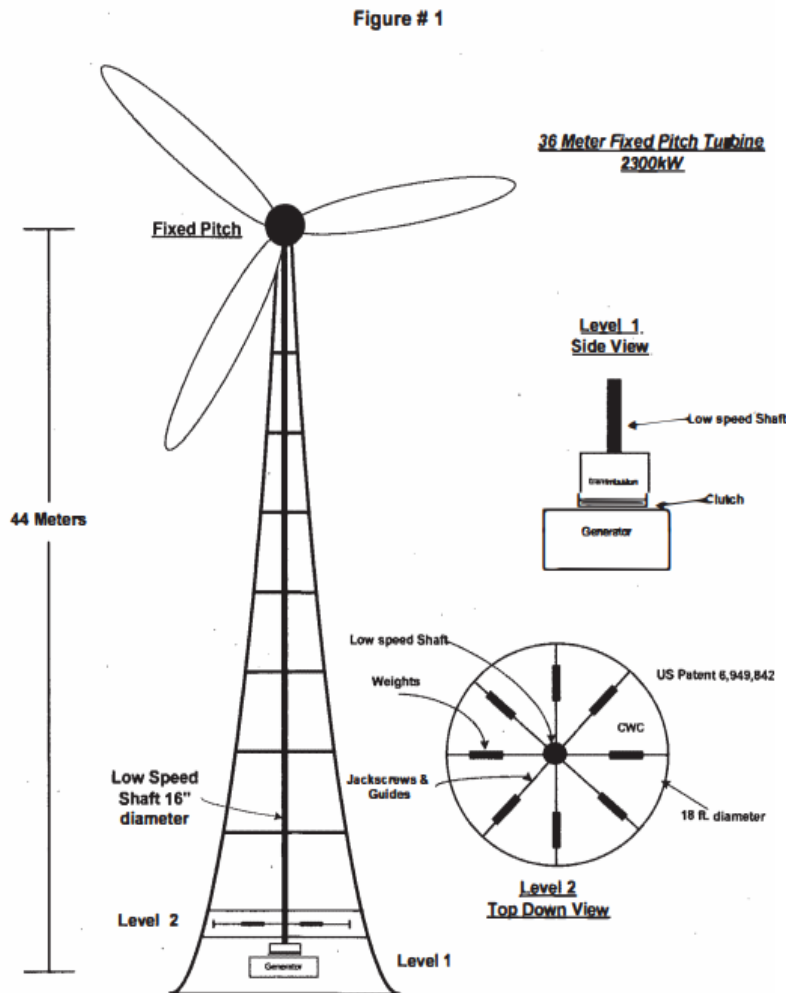
I

The ’235 application, filed on October 18, 2010, involves fixed-pitch wind or water turbines with centrifugal weight control. J.A. 30. For this appeal, the application’s disclosures on wind turbines are most relevant. The application builds on Mr. Earley’s ’842 patent and uses that earlier patent’s “control solution”—a centrifugal-weight-control assembly. J.A. 31. This application describes “an implementation” that “extend[s] the low speed shaft down the length of the tower” of a wind turbine. J.A. 31. According to the ’235 application, “extending the low speed shaft down the length of the tower also means you can move other major components down, including [a] generator and [a] gearbox,” resulting “in several compelling advantages.” J.A. 31. The centrifugal-weight-control “configuration is horizontal (perpendicular to [the] vertical low speed shaft).” J.A. 32.

Figure 1 illustrates the wind-turbine embodiment:

IN RE: EARLEY

3



J.A. 35.

The specification asserts that this configuration is an improvement over the prior art. It says: “Employing [centrifugal weight control] (in lieu of pitch or stall solutions) in conjunction with induction generator torque, enables on demand control of necessary amounts of opposing torque to manage rotor speed in gusty and increasing wind speeds through cut-out . . . typically 25 meters per second.” J.A.

31 (second alteration in original). “Current technology captures and transforms less than half of the energy content available,” the specification states, explaining that, in the prior art, “the operating speed [for wind turbines] is typically up to 25 m/s” but the “rated power is typically reached at 14 or 15 m/s.” J.A. 30. The arrangement in the ’235 application purports to use more of the available energy.

Claim 26 is representative and recites:

A wind turbine for the production of increasing amounts of energy in increasing wind speeds up to cut-out at 25 m/s [c]omprising:

a supporting framework including:

an elevated platform for the swiveling movement about a vertical axis;

a supporting tower;

a rotor with fixed pitch blades;

a horizontal low speed shaft that couples to said rotor for rotation with said rotor;

a right angle gearbox that journals said horizontal shaft to input of said right angle gearbox;

an extended vertical shaft that journals to output side of said right angle gearbox;

a centrifugal weight control apparatus that drivingly connects to said extended vertical shaft at base of tower;

a multi-gearred transmission having a low speed input connected to said extended vertical shaft;

a high speed output of said multi-gearred transmission;

IN RE: EARLEY

5

a clutch that journals to said high speed output[; and]

an induction generator that operatively connects to said clutch for rotation at desired speeds.

J.A. 756 (emphasis added).

II

A

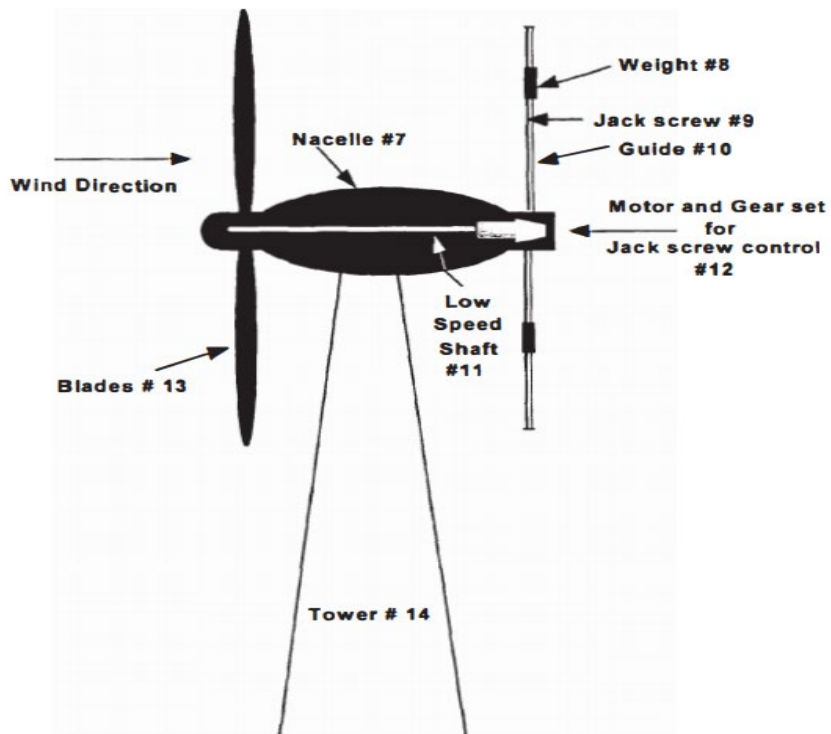
The examiner and the Board relied on three prior-art references—the '842 patent, Carter, and Simon—for rejecting representative claim 26.

The '842 patent: "Centrifugal Weight Control for a Wind or Water Turbine." The '842 patent lists Mr. Earley as the inventor and describes a "centrifugal weight control" assembly that "control[s] rotor speed" while wind (or water) speed changes. '842 patent, col. 2, lines 14–18. The assembly includes weights that can be moved away from or toward the rotational axis to change the inertial force. *Id.*, col. 2, lines 30–50. By adjusting the location of the weights while the overall assembly rotates, the centrifugal-weight-control assembly can maintain the wind turbine's operating speed while increasing rolling torque, which allows generators to capture energy. *Id.* The general concept is similar to changing gears on a bike. Unlike the '235 application, the centrifugal-weight-control assembly of the '842 patent is essentially parallel to the blades of a wind turbine and not connected to a vertical shaft.

Figure 1 shows the placement of the assembly:

WT/CWC Side View

Figure 1

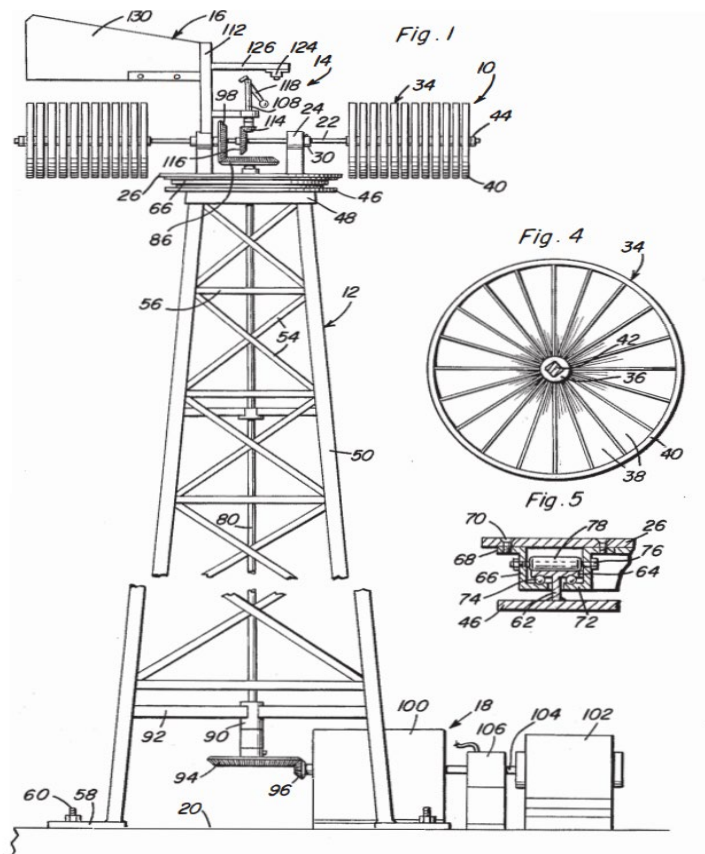


'842 patent, fig. 1.

Carter: "Wind Turbine with Governor." Carter "generally relates to a wind driven turbine assembly for driving a generator or generators in a manner to produce electrical energy in response to rotation of the wind turbine." Carter, col. 1, lines 6–9. Carter describes "a wind turbine assembly including a single vertical drive shaft drivingly connected to a generator assembly and a governor assembly for controlling the rotational speed of the drive shaft by connecting additional generators to the drive shaft for increasing

the load thereon.” *Id.*, col. 1, lines 37–43. “The horizontal shaft is drivingly connected to a vertical shaft which drives a generator assembly at the lower end of the supporting framework. A wind vane assembly is connected to the turntable and a governor assembly is drivingly connected to the horizontal shaft for controlling the rotational speed of the wind wheels and horizontal shaft.” *Id.*, Abstract.

Figure 1 shows the location of the transmission and generator at the base of the turbine:



Carter, fig. 1.

Simon: "Power Generating System." This prior-art reference describes "[a] system for converting wind power to

electrical power comprising a transmission module with multiple power flows to an output and a first generator coupled to the output.” Simon, Abstract. In particular, Simon describes a “power conversion module 18” with “an induction generator, which provides a cost-effective machine for converting the rotational energy to electricity for power to the grid 22.” *Id.*, ¶ 26. Simon also describes a multi-geared transmission, namely, “a transmission 30 selectable between at least two gear ratios, for example[,] a three (or more) speed transmission, coupled between the turbine 10 for receiving wind energy and at least one generator 36 in the power conversion module 18.” *Id.*, ¶ 30.

B

On January 6, 2017, the examiner issued Mr. Earley a final rejection of claims 26–29 for obviousness over the combination of the ’842 patent, Carter, and Simon. J.A. 598 (Final Rejection). The examiner determined that the ’842 patent disclosed all claim elements except (1) an extended vertical shaft, (2) a gearbox with a multi-geared transmission, and (3) an induction-type generator. J.A. 598–99. As to “an extended vertical shaft,” the examiner concluded that “[i]t would have been obvious to one skilled in the art at the time the invention was made to use the extended vertical shaft disclosed by Carter on the supporting tower disclosed by [the ’842 patent] for the purpose of providing mechanical power to a generator located at the base of a tower.” J.A. 600. As to “a gearbox with a multi-geared transmission” and “an induction-type generator,” the examiner determined:

It would have also been obvious to one skilled in the art at the time the invention was made to use the multi-speed transmission (in lieu of the multi-geared transmission disclosed by [the ’842 patent]) and an induction generator (in lieu of the generator disclosed by [the ’842 patent] or the generator disclosed by Carter) disclosed by Simon on

IN RE: EARLEY

9

the wind turbine disclosed by [the '842 patent] for the purpose of providing multiple high-speed outputs instead of a single high-speed output from the transmission and providing “*a cost-effective machine for converting the rotational energy to electricity.*”

J.A. 600 (quoting Simon, ¶ 26).

On November 14, 2019, the Board affirmed the examiner's rejections. *Ex parte Earley*, 2019 Pat. App. LEXIS 10527, *2 (P.T.A.B. November 14, 2019). In reaching that result, the Board rejected three arguments. The Board first explained that the '842 patent's “wind turbine includes the same structural elements that [Mr. Earley] discloses are responsible for the functional limitations recited in claim 26's preamble.” *Id.* at *9–10 (citation omitted). For that reason, explained the Board, “the burden was on [Mr. Earley] to show that [the '842 patent's] wind turbine as modified by the suggestions in the other prior art references would not inherently perform the same function recited in claim 26.” *Id.* at *10. Because Mr. Earley did not “direct” the Board “to any objective evidence,” he did not meet the burden. *Id.* Next, the Board rejected Mr. Earley's challenge of the motivation to combine the three prior-art references. The Board accepted the examiner's explanation that a relevant artisan would have used the vertical shaft taught in Carter “for the purpose of providing mechanical power to a generator located at the base of a tower.” *Id.* at *5–6. As to Simon, the Board found that a relevant artisan “would have implemented an induction generator in [the '842 patent] for the purpose of providing, inter alia, a cost-effective machine for converting the rotational energy to electricity.” *Id.* at *11–12. Last, the Board rejected Mr. Earley's contention that the '235 application's claimed invention achieves unexpected results. *Id.* at *12–13. The Board reasoned that Mr. Earley did “not direct us to objective, experimental data comparing the claimed

invention against the closest prior art,” so his argument was “unsupported” and “unpersuasive.” *Id.* at *12.

Mr. Earley requested a rehearing, arguing that the Board relied on a new ground of rejection. On January 27, 2020, the Board maintained its affirmance of the examiner’s rejection, but because of Mr. Earley’s “pro se status and the complex nature of this prosecution,” the Board thought it was “appropriate to designate [its earlier] affirmance as a new ground of rejection pursuant to 37 C.F.R. § 41.50(b).” *Ex parte Earley*, Appeal 2019-000815, 2020 WL 489476, at *3 (P.T.A.B. Jan. 27, 2020). Based on that designation, the Board gave Mr. Earley two options to address the ground: reopen prosecution or request a rehearing. *Id.*

Mr. Earley chose to request a rehearing. On March 11, 2020, the Board denied that (second) request for rehearing on the merits. *Ex parte Earley*, Appeal 2019-000815, 2020 WL 1286056, at *2–3 (P.T.A.B. Mar. 11, 2020). Mr. Earley contended that Simon’s induction generator could not meet the capability in the preamble because “[a]n induction generator with a 12 m/s rating would render the claimed invention inoperable for its intended use—*i.e.*, where [t]he claimed invention is unique in its ability to generate increasing amounts of energy through 24 m/s.” *Id.* at *1 (internal quotation marks omitted). The Board rejected that contention because it was “not supported by objective evidence (*e.g.*, a sworn declaration).” *Id.* Mr. Earley also asserted that the ’842 patent’s centrifugal-weight-control assembly would “inherently” act as “a very large air brake,” causing the capability requirement of the new application’s preamble not to be met. *Id.* at *2. The Board rejected the assertion, stating that it was “based merely on conclusory statements that are not accompanied by any objective evidence (*e.g.*, declaration evidence) providing detailed specifics of the systems used for comparison.” *Id.*

IN RE: EARLEY

11

Mr. Earley timely appealed. We have jurisdiction under 35 U.S.C. § 141(a) and 28 U.S.C. § 1295(a)(4)(A).

III

Accepting that claim 26 is representative, Mr. Earley challenges the Board's determination of obviousness of claim 26 based on the '842 patent, Carter, and Simon. The ultimate obviousness determination under 35 U.S.C. § 103 is a matter of law based on underlying factual findings, which include "the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, the presence or absence of a motivation to combine or modify with a reasonable expectation of success, and objective indicia of non-obviousness." *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1364 (Fed. Cir. 2015). We review the Board's ultimate obviousness determination de novo and its underlying factual findings for substantial-evidence support. *In re Varma*, 816 F.3d 1352, 1359 (Fed. Cir. 2016). Our review for substantial-evidence support "ask[s] whether a reasonable fact finder could have arrived at the agency's decision, which requires examination of the record as a whole, taking into account evidence that both justifies and detracts from an agency's decision." *Personal Web Technologies, LLC v. Apple, Inc.*, 848 F.3d 987, 991 (Fed. Cir. 2017) (cleaned up).

A

Mr. Earley challenges the Board's finding that a relevant artisan would have a motivation to combine teachings of the '842 patent, Carter, and Simon to arrive at claim 26's structure with a reasonable expectation that the result would be capable, as required by claim 26's preamble, of "the production of increasing amounts of energy in increasing wind speeds up to cut-out at 25 m/s." First, Mr. Earley asserts that use of Simon's induction generator would make the combination inoperable. Second, Mr. Earley asserts that the '842 patent's centrifugal-weight-control

assembly is “very different” from the claimed invention and would not have the preamble-required capability. Op. Br. 8. We reject these contentions.

At the core of these contentions, which focus as a substantive matter on a reasonable expectation of success, is a challenge to the Board’s demand for objective evidence. We address that challenge through the framework applicable during prosecution (in contrast to district-court litigation). “[T]he concept of prima facie obviousness establishes the framework for the obviousness determination and the burdens the parties face” during patent examination. *ACCO Brands Corp. v. Fellowes, Inc.*, 813 F.3d 1361, 1365 (Fed. Cir. 2016); *see also In re Brandt*, 886 F.3d 1171, 1176 (Fed. Cir. 2018) (describing the prima facie framework as well). “Under this framework, the patent examiner must first set forth a prima facie case, supported by evidence, showing why the claims at issue would have been obvious in light of the prior art.” *ACCO Brands*, 813 F.3d at 1365. “Once the examiner sets out this prima facie case, the burden shifts to the patentee to provide evidence, in the prior art or beyond it, or argument sufficient to rebut the examiner’s evidence.” *Id.* at 1365–66. “The examiner then reaches the final determination on obviousness by weighing the evidence establishing the prima facie case with the rebuttal evidence.” *Id.* at 1366. “If this weighing shows obviousness by a preponderance of the evidence, then the claims at issue were unpatentable.” *Id.* “This burden-shifting framework makes sense during patent examination because an examiner typically has no knowledge of objective considerations, and those considerations ‘may not be available until years after an application is filed.’” *In re Brandt*, 886 F.3d at 1176.

“The reasonable expectation of success requirement refers to the likelihood of success in combining references to meet the limitations of the claimed invention.” *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016). A relevant artisan’s

IN RE: EARLEY

13

“expectation of success need only be reasonable, not absolute.” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364, 1367–68 (Fed. Cir. 2007). “This court has long rejected a requirement of conclusive proof of efficacy for obviousness.” *Acorda Therapeutics, Inc. v. Roxane Labs., Inc.*, 903 F.3d 1310, 1333 (Fed. Cir. 2018) (cleaned up).

1

Substantial evidence supports the Board’s finding that a relevant artisan would “modif[y]” Simon’s induction generator—specifically, would “size and select an induction generator as suggested by Simon to match the enhanced capabilities of [the ’842 patent’s centrifugal-weight-control assembly]” in order to produce more energy, *Ex parte Earley*, 2020 WL 1286056, at *1, *i.e.*, “increasing amounts of energy increasing wind speeds up to cut-out at 25 m/s,” as required in claim 26’s preamble. Mr. Earley disputes that finding because Simon’s generator could not be *physically* combined with the ’842 patent. But the correct inquiry is not limited to “an actual, physical substitution of elements”; “the test for obviousness is what the combined teachings of the references would have suggested to” a relevant artisan. *In re Mouttet*, 686 F.3d 1322, 1332–33 (Fed. Cir. 2012); *see also In re Applied Materials, Inc.*, 692 F.3d 1289, 1298 (Fed. Cir. 2012) (“A reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.”); *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (obviousness inquiry must “take account of the inferences and creative steps that a person of ordinary skill in the art would employ”). The Board here properly relied on the “technical grasp of a person having ordinary skill in the art.” *Ex parte Earley*, 2020 WL 1286056, at *1.

The Board could reasonably determine that there was no evidence that justified a different finding about a relevant artisan’s modification of the specific Simon generator. Mr. Earley, who relies only on Simon’s specification, has

not shown otherwise. Mr. Earley repeatedly notes that Simon's specification is in miles per hour rather than meters per second. *See* Op. Br. 1 ("Examiner does err when he fails to understand that the quantitative work found in the prior art of Simon is accomplished in mph (miles per hour) and not m/s (meters per second)."); *see also* Op. Br. 3–4. To the extent that Mr. Earley suggests that the Board's finding fails because a relevant artisan would not convert the units from mph to m/s based on a very simple multiplicative relationship, he has not pointed to any evidence to support that implausible suggestion. Mr. Earley otherwise relies on aspects of Simon's specific induction generator, but that reliance does not undermine the Board's finding that a relevant artisan would alter Simon's specific generator to achieve the 25 m/s capability.

2

Mr. Earley argues that the Board erred in failing to accept his assertion that a relevant artisan would not have a reasonable expectation of success in using the '842 patent's disclosure of a centrifugal weight control. Mr. Earley gives two reasons. We find neither sufficient to show error.

First, Mr. Earley asserts that using the '842 patent's centrifugal-weight-control assembly on a vertical shaft would render the combination "inoperable." Op. Br. 6–7. Specifically, Mr. Earley asserts that "[t]he jackscrews and guides" of the '842 patent could not "support the amount of weight that is called for" in the claimed invention. Op. Br. 7. The Board properly rejected this assertion as "based merely on conclusory statements that are not accompanied by any objective evidence (*e.g.*, declaration evidence) providing detailed specifics of the systems used for comparison." *Ex parte Earley*, 2020 WL 1286056, at *2. The Board also properly explained that Mr. Earley's arguments about what the '842 patent's centrifugal-weight-control assembly could not do relied on properties or features not actually required by claim 26—"e.g., a limitation on air brake size,

IN RE: EARLEY

15

the exclusion of an aerodynamic means, a [centrifugal-weight-control] diameter, ability to extend or retract weights totaling eight thousand pounds, or induction generator rating.” *Id.* at *2.

Second, Mr. Earley contends that a relevant artisan would “certainly see” the centrifugal-weight-control assembly in the ’842 patent as an “air brake” that would cause a “drag force,” preventing the combined prior art from having the capability required by claim 26’s preamble. Op. Br. 8; Reply Br. 4. Like his arguments for Simon’s induction generator, Mr. Earley’s contention addresses the wrong question. It focuses only on the specific apparatus of the ’842 patent. It does not undermine the Board’s finding about the ’842 patent’s overall teachings on the centrifugal-weight-control assembly and Carter’s teachings on the location of the assembly, among other components, at the base of the support staff.

B

Mr. Earley also presents two challenges to the Board’s inherency reasoning in finding that the combination of the prior-art teachings would be a structure having the capability required by claim 26’s preamble. We reject both challenges.

1

Mr. Earley argues that the Board issued a new ground of rejection when, in rejecting his second request for rehearing on the merits, the Board stated: “although we appreciate that claim 26’s preamble language recites a new capability rather than merely an intended use, this capability was already disclosed in [the ’842 patent] . . .” *Ex parte Earley*, 2020 WL 1286056, at *1; Op. Br. 5. We disagree.

When the Board relies on “a new ground of rejection not relied upon by the examiner, the applicant is entitled to reopen prosecution or to request a rehearing.” *In re*

Leithem, 661 F.3d 1316, 1319 (Fed. Cir. 2011) (citing 37 C.F.R. § 41.50(b)). “Whether the Board relied on a new ground of rejection is a legal question that we review de novo.” *In re Stepan Co.*, 660 F.3d 1341, 1343 (Fed. Cir. 2011). “The ultimate criterion of whether a rejection is considered new in a decision by the Board is whether applicants have had fair opportunity to react to the thrust of the rejection.” *In re Leithem*, 661 F.3d at 1319 (cleaned up); see also *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (“It is well-established that the Board is free to affirm an examiner’s rejection so long as ‘appellants have had a fair opportunity to react to the thrust of the rejection.’”). Mr. Earley had such an opportunity in his second rehearing.

In its first rehearing decision, the Board specifically explained how the examiner properly “pointed out that a claim to an apparatus must be distinguished patentably from the prior art in terms of structure rather than function”—the same point made in the second rehearing decision. *Ex parte Earley*, 2020 WL 489476, at *2. Because of Mr. Earley’s “pro se status and the complex nature of this prosecution,” the Board in the first rehearing decision “designated” its reasoning a new ground of rejection and gave Mr. Earley “two options”: (1) reopen prosecution or (2) request a rehearing. *Id.* at *3. By taking the rehearing option, Mr. Earley had a fair opportunity to address this ground of rejection—which was not materially changed by the Board’s second rehearing decision. See *In re Black*, 778 F. App’x 911, 918 (Fed. Cir. 2019) (concluding that the applicant’s “opportunity to respond to the Board’s grounds for rejection in the Request for Rehearing” was sufficient).

2

On the merits, the Board did not commit reversible error. “We have recognized that inherency may supply a missing claim limitation in an obviousness analysis.” *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1194–95 (Fed. Cir. 2014). Inherency is a question of fact. *Id.* at

1194; *In re Napier*, 55 F.3d 610, 613 (Fed. Cir. 1995). “Inherency . . . may not be established by probabilities or possibilities.” *PAR Pharm.*, 773 F.3d at 1195. “The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Id.* A party must instead “show that the *natural result flowing* from the operation as taught would result in the performance of the questioned function.” *Id.*

In the present case, the Board stated that Mr. Earley’s own application points to certain structural features as responsible for the preamble-required functional capability, that the ’842 patent (being combined with teachings from Carter and Simon) had the same structural features, and that the combination therefore would have the functional capability, unless objective evidence showed otherwise:

Because [the ’842 patent] wind turbine includes the same structural elements that [Mr. Earley’s present application] discloses are responsible for the functional limitations recited in claim 26’s preamble, the burden was on [Mr. Earley] to show that [the ’842 patent’s] wind turbine as modified by the suggestions in the other prior art references would not inherently perform the same function recited in claim 26. [Mr. Earley] does not direct us to any objective evidence in satisfaction of meeting that burden.

Ex parte Earley, 2019 Pat. App. LEXIS 10527, at *9–10. That inherency reasoning is proper under the prima facie framework.

Indeed, the Board needs only a “sound basis for believing” that the combined teachings of the prior art’s structure results in the functional limitation. *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) (“[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.”); *see also In re Ikeda Food*

Research Co., Ltd., 758 F. App'x 952, 957 (Fed. Cir. 2019) (obviousness case citing *In re Spada*, 911 F.2d at 708, for the sound-basis proposition); *In re Best*, 562 F.2d 1252, 1255 (C.C.P.A. 1977) (“Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.”); *Southwire Co. v. Cerro Wire LLC*, 870 F.3d 1306, 1311 (Fed. Cir. 2017) (adopting *In re Best*'s burden-of-production framework). The burden thus shifted to Mr. Earley to produce evidence to rebut the Board's initial finding. Mr. Earley did not do so. The Board's finding is supported by substantial evidence.

IV

We have considered Mr. Earley's other arguments and find them unpersuasive. For the reasons we have stated, we affirm the Board's conclusion that claims 26–29 of the '235 application are unpatentable for obviousness.

Each party shall bear its own costs.

AFFIRMED