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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* NATHAN K. MECKEL

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Appeal 2019-001650  
Application 12/195,994  
Technology Center 3600

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Before LYNNE H. BROWNE, JILL D. HILL, and ROBERT L. KINDER,  
*Administrative Patent Judges.*

BROWNE, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–19, 34, 35, and 37. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Tech M3, Inc. App. Br. 2.

**CLAIMED SUBJECT MATTER**

The claims are directed to a brake device. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A brake disk, comprising:
  - a disk body having oppositely directed surfaces, the disk body being formed of a substrate material; and
  - at least one of the surfaces having a plurality of spaced, raised island formations and channels extending between the island formations, the raised island formations being formed of the substrate material;
  - each raised island formation having an outer friction surface which contacts a brake pad during braking and each channel having a roughened base surface, the outer friction surface comprising a wear and corrosion resistant coating which eliminates or greatly reduces wear of the island formations, relative to the substrate material in an uncoated state, during use of the brake disk in braking operation, the roughened base surface creating turbulence in air flowing along the channels, over the at least one surface in a direction parallel to the outer friction surface.

**REFERENCE(S)**

The prior art relied upon by the Examiner is:

<b>Name</b>	<b>References</b>	<b>Date</b>
Meckel	US 2005/0087406 A1	Apr. 28, 2005
Callahan	US 2005/0252739 A1	Nov. 17, 2005
Baumgartner	WO 2006/092270 A1	Sept. 08, 2006
Baumgartner	US 2008/0041675 A1	Feb. 21, 2008

**REJECTION**

Claims 1–19, 34, 35, and 37 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Baumgartner, Callahan, and Meckel.

OPINION

*Claims 1–16, 18, 19, 34, 35, and 37*

The Examiner determines that Baumgartner, Callahan, and Meckel disclose or suggest all of the limitations of claims 1–16, 18, 19, 34, 35, and 37. Non-Final Act. 2–7. Specifically, *in rejecting claims 1 and 34*, the Examiner determines that Baumgartner and Callahan disclose or suggest all of the limitations except for the coating. *Id.* at 2–3. The Examiner further finds that “Meckel teaches providing a brake disc (12) with a coating (24) comprising at least one layer (28, 30) of a coating material. *Id.* at 3 (citing Meckel, Abs.). The Examiner reasons that it would have been obvious to “modify each oppositely directed surface of the disk body including the friction surfaces of the island formations [of] Baumgartner to be coated with a coating, as taught by Meckel, to provide an aesthetically pleasing coating that is hard and wear resistant.” *Id.* at 3–4.

Appellant argues that one skilled in the art “would not have understood that one coating material applied to a particular type of substrate could be substituted for the same coating material being applied to an entirely different type of substrate, let alone that such a combination might be desirable if it were even possible.” App. Br. 17. In support of this argument, Appellant notes that “Meckel describes the disadvantages of a cast iron brake disk.” *Id.* (citing Meckel ¶ 4). Appellant argues further that “[n]othing in the record or cited prior art (e.g., Meckel, Baumgartner, and Callahan (which is cited for teaching roughened surfaces)), reasonably supports a finding that the coating of Meckel can be deposited onto a disk substrate having a material other than a Titanium alloy, and certainly not cast iron.” *Id.*

Meckel describes cast iron as being heavier than titanium or aluminum, but does not otherwise criticize, discredit, or discourage its use. Meckel ¶ 4. Thus, to the extent that Appellant intends to imply that Meckel discourages the use of its coating with cast iron, Meckel does not do so. *See id.* Instead, Meckel compares the relative advantages and disadvantages of cast iron, titanium, and aluminum. *Id.* Further, we are not aware of any requirement that the references relied upon expressly suggest the proposed modification. Rather, the test for obviousness “is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Thus, Appellant’s argument that none of the references suggest the proposed modification does not apprise us of error.

Next, Appellant contends that one skilled in the art “would not reasonably consider teachings relating to a coating applied to a lightweight titanium alloy material to be properly suggestive of applying such a coating to cast iron materials, such as the substrate described in Baumgartner, to provide similar results without requiring significant experimentation.” App. Br. 17. In support of this contention, Appellant asserts that “given the lack of predictability in the art of surface chemistry and materials science, which would be understood by any person of ordinary skill in the art, the claims cannot be reasonably construed as unpatentably obvious based on the cited art and the rationale set forth by the Examiner.” *Id.* at 17–18.

Appellant, however, does not point to any evidence in support of these contentions. For example, Appellant does not assert that applying Meckel’s coating to Baumgartner’s brake disk would result in an adverse chemical reaction or provide evidence that such is the case. An attorney’s arguments in a brief, however, cannot take the place of evidence. *In re Pearson*, 494

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F.2d 1399, 1405 (CCPA 1974). Thus, Appellant does not apprise us of error.

Noting that “Baumgartner describes the expansion joints as necessary to avoid cracking and other results of thermal stresses that commonly occur with cast iron rotors,” Appellant argues that one skilled in the art “would readily understand that such expansion joints would not be necessary in a rotor formed of the lightweight titanium alloys described by Meckel.” App. Br. 18. This argument, however, is not responsive to the rejection as articulated by the Examiner which does not propose modification of Meckel in the manner argued. *See* Non-Final Act. 2–4. Thus, Appellant does not apprise us of error.

In addition, Appellant argues that “the friction surfaces (e.g., subsegments of the brake disk) of Baumgartner are specifically designed to wear down over time, and nothing in Baumgartner points to or even suggests the use of a coating applied to those friction surfaces to reduce wear.” App. Br. 18. As noted above, however, there is no requirement that Baumgartner suggested the proposed modification. Moreover, the fact that Baumgartner’s disclosure accounts for wear, does not imply that Baumgartner’s device would not benefit from a modification (such as the application of a coating) which reduces or eliminates such wear. Appellant does not identify nor do we discern where Baumgartner states that wear is a necessary. Thus, Appellant’s argument is inapposite.

Appellant then explicitly asserts that Meckel “teaches away” from the proposed modification. App. Br. 19. A “reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not ‘criticize, discredit, or otherwise discourage’ investigation into the invention claimed.” *DePuy Spine, Inc. v. Medtronic*

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*Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quoting *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004)). We will not read into a reference a teaching away from a proposed combination when no such language exists. See *Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1364 (Fed. Cir. 2006).

As noted above, Meckel describes the advantages and disadvantages of cast iron in paragraph 4. The Federal Circuit has explained that “a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.” *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006). “The fact that the motivating benefit comes at the expense of another benefit . . . should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another.” *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000). Appellant does not explain why the fact that Meckel describes cast iron as being heavier than titanium (a fact that is not in dispute) outweighs the advantages gained by application of Meckel’s coating to Baumgartner’s brake disk. Thus, Appellant does not apprise us of error.

Finally, Appellant asserts that one skilled in the art would not have known how “to apply a coating to a large number of separated subsegments having separate friction surfaces based on the teachings of Meckel, in which only a method is described for depositing a coating across nearly an entire brake disk having a single flat annular surface extending across the entire brake disk.” App. Br. 19. Appellant’s argument suggests that one of ordinary skill in that art can only follow the express teachings of the references relied upon in the rejection and ignores the fact that “a person of

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ordinary skill is also a person of ordinary creativity, not an automaton.”  
*KSR Int’l. Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007). Appellant does not explain why coating a segmented brake disk is beyond the skill of one skilled in the art. Thus, Appellant does not apprise us of error.

In the Reply Brief Appellant does not identify specific errors in the Examiner’s findings or reasoning. *See general* Reply Br. Instead Appellant makes general allegations that the rejection is flawed. *Id.* Such general allegations that the claims define a patentable invention do not apprise us of error.

For these reasons, we sustain the Examiner’s decision rejecting claims 1 and 34 as unpatentable over Baumgartner, Callahan, and Meckel. Appellant does not present separate arguments for the patentability of claims 2–16, 18, 19, 35, and 37. *See generally* App. Br. Accordingly, we sustain the Examiner’s decision rejecting these claims as well.

#### *Claim 17*

Admitting that “Meckel fails to expressly disclose that the first coating layer has a crystalline structure,” the Examiner finds that “[i]nstead, Meckel discloses that the first coating layer has an amorphous structure. Non-Final Act. 5 (citing Meckel ¶ 23. The Examiner reasons it would have been obvious

to modify the first coating layer as taught by Meckel to have a crystalline structure instead of an amorphous structure, as a matter of simple engineering design choice, merely to provide the predictable result of a suitable, alternative form of the first coating material (e.g. crystalline titanium instead of amorphous titanium) depending on various factors such as availability, cost, and manufacturability.

*Id.* The Examiner submits that material selection is a routine practice performed by those of ordinary skill in the art.” *Id.*

Noting that “Meckel describes a coating 24 including a first layer 28 ‘of a material having an amorphous structure (i.e. a non-crystalline structure),’” Appellant asserts that “the Examiner erroneously asserted that it would have been obvious to modify the first coating layer of Meckel to have a crystalline structure instead of an amorphous structure.” App. Br. 13–14 (citing Meckel ¶¶ 10, 23) (emphasis omitted). In support of this argument, Appellant asserts that “Meckel specifically defines an amorphous structure as a non-crystalline structure” and that “[o]ther sources support the definition of an amorphous structure provided in Meckel. For example, the online Oxford Dictionary defines an amorphous solid as ‘not crystalline, or not apparently crystalline,’ and the online [Merriam]-Webster dictionary defines amorphous as ‘having no real or apparent crystalline form.’” *Id.* at 14–15 (emphasis and footnotes omitted).

Appellant’s argument is persuasive because the Examiner provides no evidence to show that coating layers having a crystalline structure were known at the time of the invention. Without such underlying evidence, Examiner’s arguments are unfounded.

For this reason, we do not sustain the Examiner’s decision rejecting claim 17 as unpatentable over Baumgartner, Callahan, and Meckel.

## CONCLUSION

The Examiner’s rejection of claims 1–16, 18, 19, 34, 35, and 37 under 35 U.S.C. § 103(a) as unpatentable over Baumgartner, Callahan, and Meckel is AFFIRMED.

The Examiner’s rejection of claim 17 under 35 U.S.C. § 103(a) as unpatentable over Baumgartner, Callahan, and Meckel is REVERSED.

DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-19, 34, 35, 37	103(a)	Baumgartner, Callahan, Meckel	1-16, 18, 19, 34, 35, 37	17

TIME PERIOD FOR RESPONSE

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

AFFIRMED-IN-PART