

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

General Electric Company,
Petitioner,

v.

United Technologies Corporation,
Patent Owner

Case IPR2016-01289
Patent 7,060,360 B2

PATENT OWNER'S RESPONSIVE REMAND BRIEF

Before and during trial, UTC argued that “bond layer” means “a layer of material designed to adhere another layer to a substrate.” Paper 6, p. 14-16; Paper 12, p. 40-46. GE chose not to offer evidence addressing UTC’s construction, instead arguing that “bond layer” should be defined “solely in terms of its location and the material from which it is composed.” Paper 16, pp. 18-22. The Federal Circuit rejected GE’s argument, holding that a “bond layer” is “designed to adhere another layer to a substrate” and that the bond layer’s location and composition are “**additional**” requirements of claim 1. *United Techs. Corp. v. Gen. Elec. Co.*, 2019 WL 332754, at *2 (Fed. Cir. Jan. 25, 2019) (original emphasis).

Nevertheless, GE argues that Terentieva’s protective coating constitutes a “bond layer” for Eaton’s BSAS layer because it has the location and composition required by claim 1. *See* Paper 29 at 5 (relying on Terentieva’s protective coating being an “intermediate” layer), 6-7 (relying on Terentieva’s coating falling within the claimed genus). Those arguments are foreclosed by the Federal Circuit’s construction and mandate, which require separate proof that Terentieva’s alleged “bond layer” “**also** ha[s] to bond,” and indeed must be “**designed to bond** another layer to a substrate.” *United Techs.*, 2019 WL 332754, at *2 (first emphasis in the original).

GE cannot show that Terentieva’s protective coating provides any adherence in the context of the proposed combination, much less that it is “designed to” adhere

Eaton's BSAS to a substrate. Indeed, every citation to evidence GE provides either relates to different materials than those at issue in its combination or misrepresents what the cited material actually says. Accordingly, GE has not met its burden under the Federal Circuit's construction.¹

I. The Record Is Devoid of Evidence Showing *Any* Adherence Between the Layers in GE's Proposed Combination

GE admits that its evidence does not “show that Terentieva's exact coating layer adheres Eaton's exact BSAS layer to the substrate.” *See* Paper 29 at 6. Yet, the combination GE defined in its petition suggests no alterations to the layers disclosed in the prior art when combining them. *See* Pet., 23. Therefore, GE must show that its proposed combination includes a layer that meets the Federal Circuit's construction of “bond layer.” *See Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d 1075, 1086 (Fed. Cir. 2008). Indeed, as described below, none of GE's evidence demonstrates that Terentieva's protective coating is “a layer of material *designed to adhere* another layer to a substrate,” as the Federal Circuit's construction requires. *United Techs.*, 2019 WL 332754, at *2 (emphasis added).

First, the Petition combined Terentieva's protective coating with Eaton's

¹ GE's remand brief addresses only Ground 1 of the Petition. Although GE has therefore waived any arguments regarding Ground 2 under the Federal Circuit's construction, the deficiencies discussed herein would also apply to Ground 2.

BSAS layer, not with Terentieva's optional outer layer on which GE now relies. *See, e.g.*, Paper 16 at 9-10 (describing that GE's combination is Eaton's BSAS EBC deposited directly on Terentieva's protective coating); Paper 29 at 3-4 (citing FWD at 17; Ex. 1005, 3:7-10, 4:45-50). Whether this optional outer refractory layer could be adhered to a substrate by Terentieva's protective coating is not relevant. As Terentieva explains, its optional outer refractory layer "compris[es] at least one oxide such as a layer of silica, alumina, or zirconia glass, or a layer of a non-oxide ceramic such as silicon carbide (SiC) or silicon nitride (Si₃N₄) e.g. obtained by chemical vapor deposition." Ex. 1005, 3:7-10 [cited in Paper 29 at 4]. Because BSAS is not among these materials, even if the protective coating were designed to adhere these other materials to a substrate, GE lacks evidence that the protective coating would retain that functionality when those layers were substituted with Eaton's BSAS layer. But GE's proof does not go even that far because Terentieva does not describe the extent to which its protective coating adheres its optional outer layer to a substrate, and GE provides no reasoned explanation regarding how it is "designed to" do so. *See* Ex. 1005, 3:7-10, 4:45-50.

Second, GE asserts that "Terentieva teaches that the coating layer has adherent properties." *Id.* at 3. However, the citations GE provides speak to only adherence between Terentieva's protective coating and the underlying substrate. *See id.* at 3 (arguing that Terentieva's protective coating "adhered well' *to* materials,"

and “the coating layer is designed to adhere *to* the underlying layer, e.g., the substrate” (emphases added)). This evidence does not describe any adherence between Terentieva’s protective coating and Eaton’s BSAS, which is the key relationship. GE’s citation to Dr. Glaeser’s discussion of col. 3:17-33 of Terentieva is not pertinent to the Federal Circuit’s claim construction because that portion of Terentieva discusses adherence between the eutectic elements of Terentieva’s coating and the “other structural component[s]” which “form[] the armature” of the protective coating. Ex. 1005, 3:17-33. GE’s attempt to recast this description as showing adherence to *other layers* is misleading and unsupported.

Third, GE asserts that “it was well known that aluminosilicates readily bonded to MoSi₂-based materials” and that “Eaton further teaches that the BSAS layer is particularly suitable for use over molybdenum-silicon alloys.” Paper 29 at 4. However, the evidence to which GE cites for the former proposition states only that “*MoSi₂ particles* readily bond with an aluminosilicate glass,” and is silent about a broader class of “MoSi₂-*based materials*.” Glaeser Decl., ¶ 54 (cited in Paper 29 at 4). Dr. Clarke explained that “Terentieva’s coating does not contain a MoSi₂ phase” and “is not a Mo-Si alloy layer.” Ex. 2013, ¶ 15 (cited in Paper 12 at 35-36). Dr. Clarke further noted that the “presence of titanium in Terentieva’s mixed refractory disilicide” may significantly alter the properties of Terentieva’s protective coating as compared to the “MoSi₂ particles” and “molybdenum-silicon alloys” cited

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