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Patterson & Sheridan - The Boeing Company c/o Patterson & Sheridan, LLP 24 GREENWAY PLAZA, SUITE 1600 Houston, TX 77046			ENGLISH, PATRICK NOLAND	
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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* SHAM S. HARIRAM

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Appeal 2019-000192  
Application 14/523,741  
Technology Center 1700

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Before BEVERLY A. FRANKLIN, BRIAN D. RANGE, and  
MICHAEL G. McMANUS, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

DECISION ON APPEAL

SUMMARY

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 28–35, 39, and 40. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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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. Appellant identifies the real party in interest as The Boeing Company. Appeal Br. 3.

STATEMENT OF THE CASE<sup>2</sup>

Appellant describes the invention as relating to a composite fire-retarding apparatus. Spec. ¶¶ 2–5. The apparatus could be, for example, a portion of an aircraft such as the engine cowling. *Id.* ¶ 16. Claim 28, reproduced below with emphases added to certain key recitations, is illustrative of the claimed subject matter:

28. A fire-retarding apparatus comprising:  
a composite comprising:  
    a first face layer;  
    a first fire-retarding attachment layer attached to the first face layer;  
    a first reinforcing layer attached to the first fire-retarding attachment layer;  
    a second fire-retarding attachment layer attached to the first reinforcing layer;  
    **a first fluid repelling layer positioned adjacent to the second fire-retarding attachment layer;**  
    a fire-retarding layer, wherein a first surface of the fire-retarding layer is positioned adjacent to the first fluid repelling layer;  
    **a second fluid repelling layer positioned adjacent to a second surface of the fire-retarding layer, wherein the second surface is opposite the first surface;**  
    a third fire-retarding attachment layer attached to the second fluid repelling layer;  
    a second reinforcing layer attached to the third fire-retarding attachment layer;  
    a fourth fire-retarding attachment layer attached to the second reinforcing layer; and  
    **a second face layer attached to the fourth fire-retarding attachment layer.**

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<sup>2</sup> In this Decision, we refer to the Final Office Action dated October 5, 2017 (“Final Act.”), the Appeal Brief filed May 4, 2018 (“Appeal Br.”), the Examiner’s Answer dated August 8, 2018 (“Ans.”), and the Reply Brief filed October 8, 2018 (“Reply Br.”).

Appeal Br. 13 (Claims App'x).

## REFERENCES

The Examiner relies upon the prior art below in rejecting the claims on appeal:

Hausrath et al. ("Hausrath")	US 2012/0163987 A1	June 28, 2012
Bass et al. ("Bass")	WO 2007/061423 A2	May 31, 2007
Fernando et al. ("Miller") <sup>3</sup>	WO 2013/074968 A1	May 23, 2013

Bessell, T. J., & Young, R. J. (1974). The long period of compression-oriented HDPE. *Journal of Polymer Science: Polymer Letters Edition*, 12(11), 629–634. doi: 10.1002/pol.1974.130121104 ("Bessell").<sup>4</sup>

Allan Britnell (Nov. 8, 2012). Know Your Insulation. (Canadian Home Workshop, Pub.) Retrieved from <http://canadianhomeworkshop.com/3092/home-renovations/know-your-insulation> (as archived at <http://web.archive.org>) ("Britnell").

Kevlar Hydrophobic and Oleophobic Coatings (Jan. 30, 2015). Retrieved from <http://www.aculon.com/hydrophobic-oleophobic-kevlar.php> (as archived at <http://web.archive.org>) ("Aculon").

## REJECTIONS

On appeal, the Examiner maintains (Ans. 3) the following rejections:

Rejection 1. Claims 28, 30, and 31 under 35 U.S.C. § 103 as unpatentable over Miller. Ans. 3.

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<sup>3</sup> The first listed inventor of this reference is Joseph A. Fernando, but we refer to the reference as "Miller" because the Examiner refers to the reference in this manner. Ans. 3.

<sup>4</sup> The Examiner refers to this reference as "Wiley and Sons." Ans. 8.

Rejection 2. Claim 29 under 35 U.S.C. § 103 as unpatentable over Miller in view of Aculon. *Id.* at 5.

Rejection 3. Claims 32, 39, and 40 under 35 U.S.C. § 103 as unpatentable over Miller in view of Hausrath. *Id.* at 6.

Rejection 4. Claim 33 under 35 U.S.C. § 103 as unpatentable over Miller in view of Hausrath and Britnell. *Id.* at 7.

Rejection 5. Claims 34 and 35 under 35 U.S.C. § 103 as unpatentable over Miller in view of Hausrath and Bass as evidenced by Bessell. *Id.* at 8.

#### ANALYSIS

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), *cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”). After considering the evidence presented in this Appeal and each of Appellant’s arguments, we are not persuaded that Appellant identifies reversible error. Thus, we affirm the Examiner’s rejections for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

Appellant argues rejections 1 and 3 separately but otherwise argues all claims as a group. *See* Appeal Br. 7, 9. Therefore, consistent with the provisions of 37 C.F.R. § 41.37(c)(1)(iv) (2013), we limit our discussion to independent claims 28 and 39. Claims 32, 33–35, and 40 stand or fall with claim 39, and all other claims on appeal stand or fall together with claim 28.

Rejections 1 and 2. The Examiner rejects independent claim 28 under 35 U.S.C. § 103 as unpatentable over Miller. Ans. 3. The Examiner finds that Miller at, for example, Figure 3 discloses most of claim 28's recited layers. *Id.* at 3–4 (citing Miller). The Examiner finds that Miller does not explicitly recite a water repellant coating on both sides of the fire barrier layer, but the Examiner finds that such layers would have been obvious “to realize water repellency for the entire layer” as Miller suggests. *Id.* at 4. The Examiner finds that Miller does not explicitly disclose that scrim layer 308a may have a polymeric film bonded to its exterior. *Id.* The Examiner determines, however, that it would have been obvious “to add an additional polymeric flame propagation resistant film to the exterior of the scrim layer in order to prevent damage to the fibrous nylon or fiberglass scrim layer, and to provide additional flame resistance.” *Id.*

Appellant argues that the Examiner has not adequately explained why a person of skill in the art would have modified Miller so that a water repellant layer would be present on both sides of a fire barrier layer. Appeal Br. 7–8. This argument is unpersuasive because Miller suggests that repelling water from the entire fire barrier layer is desirable. Ans. 4, 10–11. In particular, Miller teaches that its water repellent may be a component of or impregnated into the fire barrier layer. Miller 9:1–11. Miller also teaches that the water repellant may be utilized in the fire barrier laminate. *Id.* The fire barrier laminate, in turn, may be used to adhere layers to each other. *Id.* at 11:28–12:2. In view of these teachings, we agree with the Examiner that the preponderance of the evidence supports that it would have been obvious to apply water repellant coating to both sides of Miller's fire barrier. Ans. 4, 10–11.

Appellant also argues that the record provides no reason to place a polymeric film layer external to scrim layer 308a of Miller. Appeal Br. 8–9; Reply Br. 2–3. Appellant emphasizes that Miller Figure 1D puts polymeric layer 306 to the interior of scrim layer 308a. Reply Br. 2. This argument is unpersuasive because, as the Examiner explains, Miller teaches the advantages of having a polymeric layer external to a scrim layer. Ans. 12. In particular, Figure 1D depicts polymeric layer 310 exterior to scrim layer 308. The polymeric layer is between the scrim layer and the flames 20. The polymeric layer is flame propagation resistant. Miller 2:22–3:3; 12:16–18. Thus, a person of ordinary skill in the art would have understood that the layer 308a could be improved by adding an exterior polymeric film layer in the same manner layer 308 was improved. Although Figure 1D depicts interior polymeric film 306 as well, the existence of this interior layer (or, alternatively, the repositioning of the layer) would not negate the usefulness of an exterior layer similar to layer 310. Making this improvement would be no more than predictable use of prior art elements according to established functions. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

Because Appellant’s arguments do not establish error, we sustain the Examiner’s rejection of claims 28–31 and 33–35.

Rejection 3–5. Independent claim 39 (and dependent claim 32) recite certain fiber density, diameter, and strength properties for the reinforcing layer (claims 39) or fire-retarding layer (claim 32). The Examiner finds that Miller discloses a fiberglass scrim layer but does not teach this layer’s properties. Ans. 6. The Examiner finds, however, that Hausrath teaches glass fibers having properties within the claimed range and that Hausrath teaches its fibers are “suitable for use in high-strength applications and that

are capable of being economically formed into glass fibers using low-cost, direct melting furnaces.” Ans. 6–7 (citing, e.g., Hausrath ¶ 5). The Examiner determines that it would have been obvious to choose Hausrath’s glass fibers for the fiberglass scrim layer of Miller because doing so would achieve the high strength and reduced cost Hausrath teaches. Ans. 7.

Appellant argues that the Examiner improperly uses hindsight in determining that a person of skill in the art would have combined Hausrath’s teachings regarding glass fibers with Miller’s teachings. Appeal Br. 9–10; Reply Br. 3–4. In particular, Appellant emphasizes that Hausrath does not identify its fibers as being useful in fire-retarding applications. Reply Br. 4. Appellant’s argument is unpersuasive because the preponderance of the evidence supports the Examiner’s position that a person of skill in the art would have considered Hausrath’s glass fibers for Miller’s scrim. Ans. 6–7. Miller teaches that its scrim may compose fiberglass. Miller 11:17–26; 14:5–9. Miller does not indicate that the fiberglass must be of a specific type. A person of skill in the art, therefore, would have reasonably considered Hausrath’s fiberglass for use with Miller because of the advantages Hausrath identifies. Ans. 7 (explaining that Hausrath’s glass fibers would have been combined with Miller because of strength and low cost); Hausrath ¶ 5 (teaching strength and low cost of the Hausrath fibers). Use of Hausrath’s fiberglass with Miller is no more than predictable use of a prior art element according to established function. *KSR*, 550 U.S. at 417.

Because Appellant’s argument does not identify error, we sustain the Examiner’s rejection of claims 32, 39, and 40.

DECISION

In summary:

<b>Claims Rejected</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
28, 30, and 31	§ 103 Miller	28, 30, and 31	
29	§ 103 Miller and Aculon	29	
32, 39, and 40	§ 103 Miller and Hausrath	32, 39, and 40	
33	§ 103 Miller, Hausrath, and Britnell	33	
34 and 35	§ 103 Miller, Hausrath, Bass, and Bessell	34 and 35	
<b>Overall Outcome</b>		28–35, 39, and 40	

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