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Steinfl + Bruno LLP 155 N. Lake Ave. Ste 700 Pasadena, CA 91101			DYE, ROBERT C	
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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* PAOLA CARACINO, LUCA GIANNINI,  
THOMAS HANEL, and ANDREA SCOTTI

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Appeal 2019-004606  
Application 15/515,934  
Technology Center 1700

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Before ROMULO H. DELMENDO, MICHAEL P. COLAIANNI, and  
MONTÉ T. SQUIRE, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the  
Examiner’s decision to reject claims 1–26. 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 Pirelli  
Tyre S.P.A. Appeal Br. 2.

Appellant's invention is directed to a soundproof tire for vehicle wheels comprising special sound absorbent foams capable of reducing the noise perceived inside the driver/passenger compartment of vehicles, due to the attenuation of the cavity noise of the tire itself (Spec. 1: 4-8; Claim 1).

Claim 1 is representative of the subject matter on appeal:

1. A soundproof tyre for vehicle wheels, comprising:  
a sound absorbent material applied at least on one portion  
of a radially inner surface of a tyre,  
wherein the sound absorbent material comprises a  
foamed polyolefin material with closed macrocells  
having an average size of at least 1.5 mm according to  
ASTM D3576, and  
wherein the foamed polyolefin material with  
closed macrocells comprises at least one perforation per  
10 cm<sup>2</sup> of at least one surface of the material itself.

Appellant appeals the following rejections:

1. Claims 1–7, 11–22, and 24–26 are rejected under 35 U.S.C. § 103 as unpatentable over Yukawa (US 2007/0089824 A1, published Apr. 26, 2007) in view of Subramonian (US 2005/0086823 A1, published Apr. 28, 2005).
2. Claims 8, 10, and 23 are rejected under 35 U.S.C. § 103 as unpatentable over Yukawa in view of Subramonian and Park (US 2004/0176484 A1, published Sept. 9, 2004).
3. Claim 9 is rejected under 35 U.S.C. § 103 as unpatentable over Yukawa in view of Subramonian and Pozzana (WO 2012/156416 A1, published Nov. 22, 2012) or Lowery (US 5,962,107, issued Oct. 5, 1999).

Regarding rejection (1), Appellant argues the subject matter of claim 1 only (Appeal Br. 6–16). Appellant relies on the same arguments regarding independent claim 14 and dependent claims 2–7, 11–13, 15–22, and 24–26 as made with regard to independent claim 1 (Appeal Br. 16–17). Accordingly, these claims will stand or fall with claim 1.

Regarding rejections (2) and (3), Appellant relies on the similar arguments made with respect to claim 1 (Appeal Br. 17–18). Appellant argues that the Examiner neither construed claims 8, 9, 10, and 23, nor assessed the level of skill in the art (Appeal Br. 17 and 18). To address the arguments regarding these claims, we select claims 8 and 9 as representative. 37 C.F.R. § 41.37(c)(1)(iv).

#### FINDINGS OF FACT & ANALYSIS

##### Rejection (1)

The Examiner’s finding and conclusions regarding Yukawa and Subramonian are located on pages 2 to 3 of the Final Action. The Examiner finds that Yukawa teaches a tire having a sound absorbent material applied to the radially inner surface wherein the sound absorbent material may be either open-celled or closed-cell with a preference for polyethylene sponge (Final Act. 2). The Examiner finds that Yukawa does not disclose the average size of the cells or at least one perforation per 10 cm<sup>2</sup> of least one surface of the material (Final Act. 2, 3). The Examiner determines that it would have been obvious to make Yukawa’s polyethylene foam with an average cell size of 1.5 mm in light of Subramonian’s teachings of a similar polyethylene sound absorbing foam for use in automotive applications (Final Act. 2–3). The Examiner determines that it would have been obvious to configure Yukawa’s foam with at least one perforation per 10 cm<sup>2</sup> since

Yukawa and Subramonian disclose foam in sheet form and Subramonian discloses that perforating the foam sheet improves acoustic performance or removes blowing agent (Final Act. 3).

Appellant argues that the Examiner did not properly construe the claims (Appeal Br. 7). Appellant contends that the proper standard for claim construction should be as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), which the Patent Office has adopted for *inter partes* review proceedings (Appeal Br. 7). We disagree.

The broadest reasonable interpretation in light of the Specification is the standard applied during patent examination (i.e., pre-issuance of the claims). *See*, Manual of Patent Examining Procedure (MPEP) § 2111. In contrast, patented claims are not given the broadest reasonable interpretation during a court proceeding involving infringement or validity. *Id.* Although the Patent Office changed the claim construction standard for *inter partes* review, post-grant review, and the transitional program for covered business method patents, the broadest reasonable interpretation standard was not changed for pre-issued claims under patent examination. *See*, Rule and Regulations Department of Commerce Patent and Trademark Office, 83 Fed. Reg. 51340-01 (October 11, 2018) (to be codified at 37 CFR Part 42). The Examiner applied the proper claim construction standard in this appeal.

Appellant argues that the Examiner failed to define the level of ordinary skill in the art (Appeal Br. 8). Appellant contends that the Examiner's failure to determine the level of skill in the art requires reversal of the rejection (Appeal Br. 8). Appellant contends that the level of skill in the art is too low to sustain the Examiner's obviousness rejection (Appeal Br. 8). We disagree.

The Examiner finds that the applied art demonstrates the level of skill in the art (Ans. 4). Appellant relies on the teaching of Yukawa as a basis to determine that the level of skill in the art is low (Appeal Br. 8). In other words, the Examiner and Appellant each relies on the prior art to evince the level of skill in the art such that a specific finding regarding the level of skill in the art is not necessary in the obviousness analysis. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We are unpersuaded by Appellant's argument.

Regarding claim 1, Appellant argues that the Examiner's rejection is flawed because Yukawa and Subramonian do not enable using a foamed polyolefin material with closed macrocells that comprises at least one perforation per 10 cm<sup>2</sup> of at least one surface of the material itself (Appeal Br. 9). Appellant contends that the Examiner's rejection is based upon a perception that the level of skill is higher than indicated in the applied references (Appeal Br. 8). Appellant argues that Yukawa does not teach perforating the foam and a person of ordinary skill in the art would understand that perforated material that is to be fastened with adhesive tape may exhibit different adhesive properties than unperforated material (Appeal Br. 10). Appellant argues that a person of ordinary skill in the art would understand that the perforations would impact the contact area of the adhesive tape and affect adhesion of the double-sided tape to the perforated foam (Appeal Br. 11). Appellant contends that Yukawa and Subramonian do not enable a person of ordinary skill in the art to make and use the claimed invention (Appeal Br. 11). Appellant argues that the combination of Subramonian's perforations with Yukawa's foam lacks a reasonable expectation of success and is based on impermissible hindsight (Appeal

Br. 12–15). Appellant contends that there is no reasonable expectation that using Yukawa’s double-sided tape to adhere a perforated foam to the inner radial surface of a tire would have been successful (Appeal Br. 13).

Appellant argues that Yukawa prefers the use of polyurethane sponge over polyethylene foam such that using a polyolefin foam in Yukawa is based on impermissible hindsight (Appeal Br. 15). Appellant argues that Subramonian does not teach using a perforated foam in a tire (Appeal Br. 15).

Contrary to Appellant’s argument, the Examiner finds that Yukawa teaches different types of adhesives and different types of foam materials for the foam damper (Ans. 4). The Examiner finds that it would have been within the purview of one of ordinary skill in the art to select appropriate damper and adhesive materials and to conduct routine testing to determine whether the adhesive force conditions are appropriate for the double-sided tape (Appeal Br. 4). The Examiner correctly finds that Yukawa’s disclosure is not limited to the preferred embodiment (Ans. 4). Indeed, Yukawa teaches that the noise damper may be made of polyethylene, closed-cell foam (¶ 63). Yukawa teaches that the adhesive on the double-sided adhesive tape may be a variety of adhesives (¶¶ 82, 83). In other words, while there may be some trial-and-error involved in finding the right combination of adhesive and foam, such experimentation has not been shown to be beyond the skill of one of ordinary skill in the art.

The Examiner and Appellant agree that Yukawa does not teach perforating the closed-cell foam, but the Examiner finds that Subramonian teaches perforated foam improves acoustic performance of thermoplastic foams (Final Act. 3). Appellant does not dispute that Subramonian teaches

that adding perforations to the foam produces improved acoustic properties (Appeal Br. *generally*). We are unpersuaded by Appellant's arguments regarding reasonable expectation of success and impermissible hindsight. While trial-and-error might be required to make a perforated foam piece adhere to Yukawa's inner radial portion of the tire using double-sided tape, all that is required is reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988) ("Obviousness does not require absolute predictability of success."). In the present case, although the perforated foam will have more holes than non-perforated foam, we agree with the Examiner that the perforated holes will be small and there will be solid regions between the perforations that the double-sided tape may adhere to (Ans. 5). The Examiner reasonably finds that Subramonian's acoustic foam material is consistent with Yukawa's disclosure of suitable acoustic foam materials such that there would have been a reasonable expectation of success given Subramonian's disclosed foam material is consistent with Yukawa's list of suitable foam materials and Subramonian's disclosed advantages (Ans. 6).

Appellant's argument regarding hindsight is not persuasive. Yukawa lists several types of acoustic foams that may be suitable, including closed-cell polyethylene foam (§ 63). Subramonian discloses acoustic foams made from low density polyethylene containing perforations to improve acoustic performance and that are useful in automotive applications (§§ 52, 129, 130, 148, 149). Accordingly, the combined teachings of Yukawa and Subramonian would have suggested using Subramonian's perforation technique on Yukawa's foam to improve acoustic properties. The

Examiner's combination is not based on impermissible hindsight, but rather the teachings of the references.

On this record, we affirm the Examiner's §103(a) rejection of claims 1–7, 11–22, and 24–26 over Yukawa in view of Subramonian.

### Rejections (2) and (3)

Regarding claim 8, Appellant argues that for “these unconstrued dependent claims directed to specific configurations of Subramonian's perforations, the not enabled combination of references would be beyond the abilities of one having a low level of skill in the pertinent art.” (Appeal Br. 17). Appellant further argues hindsight in the combination of Park with Yukawa and Subramonian (Appeal Br. 17). Regarding claim 9, Appellant argues a person having a low level of skill in the art would not know how to modify Yukawa with Subramonian and Pozzana or Lowery to enable Appellant's claimed invention (Appeal Br. 18). Appellant further argues impermissible hindsight and the Examiner's failure to construe claim 9 as reasons for reversal (Appeal Br. 18). We disagree.

Contrary to Appellant's arguments, the Examiner has construed the claim in applying the prior art to the claims (Final Act. 5–7). As noted above, the applied prior art evinces the level of skill in the art. Appellant has not shown that the level of skill as shown by the applied prior art would have been beyond the skill of the art. Appellant does not dispute the Examiner's findings regarding what Park, Pozzana, and Lowery each discloses and that they teach the claim limitations (Appeal Br. 17–18). Similarly, Appellant's statement that the combined teachings are based on hindsight does not address the Examiner's findings in the Final Action with regard to Park,

Pozzana, and Lowery in combination with Yukawa and Subramonian. In other words, Appellant has not shown reversible error with the Examiner's rejections. The preponderance of the evidence favors the Examiner's obviousness conclusion. We affirm rejections (2) and (3).

### CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>Basis</b>	<b>Prior Art</b>	<b>Affirmed</b>	<b>Reversed</b>
1-7, 11-22, 24-26	§ 103	Yukawa, Subramonian	1-7, 11-22, 24-26	
8, 10, 23	§ 103	Yukawa, Subramonian, Park	8, 10, 23	
9	§ 103	Yukawa, Subramonian, Pozzana, Lowery	9	
<b>Overall Outcome</b>			1-26	

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

**AFFIRMED**