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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* BLAINE K. SEMMENS and COLIN R. MURPHY

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Appeal 2011-002354  
Application 11/332,403  
Technology Center 3600

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Before: GAY ANN SPAHN, WILLIAM V. SAINDON, and  
REMY J. VANOPHEM, *Administrative Patent Judges*.

VANOPHEM, *Administrative Patent Judge*.

DECISION ON APPEAL

### STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a rejection of claims 1-7 and 29-35. We have jurisdiction under 35 U.S.C. § 6(b).

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

1. A roofing system comprising:
  - an insulation layer;
  - a woven or non-woven synthetic fiber mat having an exposed fiber surface, said mat having an opposing surface to the exposed fiber surface;
  - a magnesium oxide cement layer in simultaneous contact with said insulation layer and the exposed fiber surface of said mat, said mat partially embedded in said cement layer with the exposed fiber surface embedded into said cement layer;
  - and
  - an elastomeric outer weatherproof coating overlying the opposing surface of said mat.

### REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Skolnik	US 2,450,258	Sep. 28, 1948
Finan	US 3,125,479	Mar. 17, 1964
Nunley	US 4,783,942	Nov. 15, 1988
Fine	US 6,167,668 B1	Jan. 2, 2001
Semmens	US 2002/0129745 A1	Sep. 19, 2002

## REJECTIONS

The following Examiner's rejections are before us for review:

- 1 Claims 1, 6, and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Semmens, in view of the teachings of Skolnik.
- 2 Claims 2 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Semmens, in view of Skolnik, and further in view of the teachings of Nunley.
- 3 Claims 3, 4, and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Semmens, in view of Skolnik, and further in view of the teachings of Finan.
- 4 Claims 5, 30, and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Semmens, in view of Skolnik, and further in view of the teachings of Fine.
- 5 Claims 32 and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Semmens, in view of Skolnik, and Finan, and , further, in view of the teachings of Fine.
- 6 Claim 34 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Semmens, in view of Skolnik, Finan, and Nunley.

## ANALYSIS

*Rejection of claims 1, 6, and 29 as unpatentable over Semmens and Skolnik*

Appellants argue claims 1, 6, and 29 as a group and we select independent claim 1 as the representative claim. *See App. Br. 5-7; see also*

37 C.F.R. § 41.37(c)(1)(vii) (2011). Claims 6 and 29 stand or fall with claim 1.

The Examiner finds that Semmens teaches the basic elements of independent claim 1 with the exception of “an insulation layer[,] wherein the cement layer is simultaneously in contact with [the]insulation layer.” Ans. 3. The Examiner also finds that Skolnik “discloses a wallboard that includes an insulation layer (10) in contact with a magnesium oxide cement layer (11).” *Id.* The Examiner therefore concludes that, “[a]t the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an insulation layer as taught by [Skolnik] with the system of [Semmens].” Ans. 4.

First, Appellants contend, “Semmens teaches away from the combination with Skolnik,” because “combination with Skolnik would produce an inoperative invention.” App. Br. 6. Specifically, Appellants explain that Semmens discloses “factory formation of a polyester fabric having a coating on a first side of a magnesium oxy-cement (MOS) containing particulate (expanded polystyrene, ... “EPS”) over which an elastomeric roof coating or rubberized roof emulsion is applied, while the other side of the polyester fabric is spray coated with magnesium oxy-cement lacking particulate dispersion,” wherein “the resultant cured fabric is ‘then applied to a fresh layer of like magnesium oxy-cement on a roof substrate such that water runs off without washing away the cement prior to set.’” *Id.* Thus, Appellants further contend that Semmen’s teaching of applying a fresh layer of like magnesium oxy-cement on a roof substrate such that water runs off without washing away the cement prior to setting teaches away from applying the factory formed sheet to contact with an

insulation layer,” because “the prior art reference combination has NO bond to an insulation layer and as such would be recognized by one of ordinary skill in the art to be inoperative as a roofing system since the precoated roofing sheet has no adhesion and further would not constitute an environmental barrier suitable for a roofing system.” *Id.* We are not persuaded by Appellants teaching away arguments because Semmens does not criticize, discredit, or otherwise discourage the inclusion of an insulation layer. *In re Fulton*, 391 F. 3d 1195, 1201 (Fed. Cir. 2004) (in order to “teach away” a reference must “criticize, discredit, or otherwise discourage the solution claimed.”). Indeed, the Examiner correctly points out that “Semmens actually infers that the composite could be combined with insulation as stated by EXAMPLE 5.” Ans. 9 (citing Semmens, p. 3, para. [0022] (“[t]he material is spray applied to an extruded polystyrene insulation panel.”)). Further, the Examiner notes that “[n]owhere does Semmens explicitly or implicitly state that the invention of Semmens would become inoperable when combined with insulation as disclosed by the secondary reference of Skolnick,” which “teaches an insulation layer (10) with a binding layer (11) for attachment to a facing.” Thus, we are not persuaded that application of the teachings of Skolnik to the Semmens’s precoated roof sheet would result in inoperability.

Second, Appellants also contend that from Semmens’s disclosure of the precoated roofing sheet being manufactured “in a factory setting,” and “[a]fter drying, this sheet can be rolled up for easy installment layer” (Semmens, p. 3, para. [0020]), “one of ordinary skill in the art would appreciate that the cement layers applied to the polyester fabric of Semmens would be cracked during the rolling and unrolling process thereby making

the prior art reference combination of a precoated roofing sheet according to Semmens as applied to an insulation layer of Skolnik even less suitable as a roofing system.” App.Br. 8. Semmens discloses at para.[0020] that the sheet can be rolled for easy installation later and expresses no concern with cracking as alleged by Appellants. Accordingly, the skilled artisan could decide to store the precoated roofing sheet in an unrolled manner to prevent cracking, but otherwise use the remainder of the teachings of Semmens in combination with Skolnik.

Third, Appellants further contend that one of ordinary skill in the art would have dismissed Skolnik’s paper fibers for the insulation material 10 as an unacceptable insulation layer on the basis that to achieve a certain degree of thermal barrier characteristics, i.e., a conventional insulation value of R-30 for a roofing system, paper fibers require a thickness greater than 10 inches, which would be unduly heavy and difficult to apply. App.Br. 7. However, the arguments put forth by the Appellants concerning thermal barrier characteristics are directed to language not found in independent claim 1 and therefore, are not commensurate with the scope of the claim. Although Appellants argue that the Examiner’s “motivation to equate the paper layer (10) of Skolnik to the insulation layer of present claims” is lacking, Appellants’ arguments do not provide evidence or reasoning to overcome the Examiner’s articulated reasoning with rational underpinning as to why a person of ordinary skill in the art would modify Semmens with the teachings of Skolnik, i.e., to insulate a structure from heat loss.

Accordingly, we sustain the Examiner’s rejection of independent claim 1, and claims 6 and 29 which stand or fall therewith, under 35 U.S.C. § 103(a).

*Rejection of claims 2 and 7 over Semmens, Skolnik and Nunley*

The Examiner finds that Semmens does not expressly disclose an elastomeric pre-coating on the opposing surface to the exposed fiber surface of the mat, said pre-coating in contact with said elastomeric outer surface. Ans. 4. The Examiner further finds that Nunley discloses an elastomeric pre-coating (28) beneath an elastomeric outer weatherproof coating (26). *Id.* The Examiner concludes that, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the elastomeric pre-coating of Nunley beneath the elastomeric weatherproof coating of Semmens, in order to provide a strong attachment to the fabric layer of Semmens. Ans. 4-5.

Appellants contend, and we agree, that the adhesive layer (28) of Nunley is noted to be a waterbased polymeric adhesive and, while polymeric, is nowhere disclosed to be elastomeric as required by claim 2. App. Br. 8 (citing Nunley, col. 4, line 66 to col 5, line 48). As noted by the Examiner, the ordinary and customary meaning of the word “elastomeric” is “a substance having elastic properties” and the ordinary and customary meaning of the word “elastic” is “capable of returning to its original shaped after being stretched.” Ans. 10 (citing Random House Unabridged Dictionary, 2010). While Nunley’s polymeric adhesive 28 has been noted to have excellent elongation properties, “elongation” does not necessarily mean “elastic,” in that the polymeric adhesive 28 may readily elongate, but then not return to its original length. Thus, the Examiner has failed to provide a preponderance of evidence to show that Nunley’s pre-coating (adhesive

layer 28) is “elastomeric” as required in claim 2. Accordingly, we will not sustain the rejection of claim 2 under 35 U.S.C. § 103(a).

As to dependent claim 7, the Examiner finds that Nunley discloses a fastener to secure system layers together (See Fig. 2). The Examiner concludes that, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the fasteners of Nunley to secure the cement soaked fiber layer and insulation layer of Semmens, in view of Skolnik, to a substrate. Ans. 5. In response, Appellants fail to address the Examiner’s proposed combination of references. Given that Appellants make no argument for the patentability of Claim 7, we sustain the rejection of claim 7. *See Hyatt v. Dudas*, 551 F 3d 1307, 1313-1314, (Fed. Cir.2008) (The Board may treat arguments Appellants failed to make for a given ground of rejection as waived.).

*Rejection of claims 3, 4 and 25 over Semmens, Skolnik and Finan*

*Regarding claim 3*

The Examiner finds that Finan discloses an asphaltic pre-coating (18) on an opposing surface of a fiber mat (17), the asphaltic pre-coating fused to a second asphaltic pre-coating (19) on a second mat (21), said second exposed fiber surface capable of receiving the elastomeric outer weatherproof coating. Ans. 5-6. The Examiner concludes that at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the asphaltic pre-coating system of Finan with the roofing system of Semmens in view of the teachings of Skolnik “to provide improved thermal insulating properties.” Ans. 6.

In response to the Examiner's findings regarding claim 3, Appellants argue that one of ordinary skill in the art attempting to improve insulating properties of a roofing system would find "the inclusion of fiber mats and tar is a grossly inefficient way to do so, and rather . . . would simply increase the R-factor of the insulation layer." This argument is mere speculation on Appellants' part as there are many ways one of ordinary skill in the art might choose to improve thermal insulating properties.

Appellants also argue teaching away "as one of ordinary skill in the art is, respectfully submitted to be disinclined to add additional labor by the inclusion of fiber and asphaltic layers to increase thermal insulation properties as cited in the outstanding office action, as compared to simply increasing the R-factor of the underlying and existing insulation layer according to the claimed invention". App. Br. 8-9. However, the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed in the '479 application. *See Fulton*, 391 F. 3d at 1201. Therefore, the rejection of claim 3 under 35 U.S.C. § 103(a) is not sustained.

*Regarding claims 4 and 35*

Appellants argue claims 4 and 35 as a group and we select independent claim 4 as the representative claim. *See App. Br. 9*. Claim 35 stands or falls with claim 4.

The Examiner finds that providing multiple layers of asphaltic pre-coating, cement layers, fiber sheets would have been obvious to one of ordinary skill in the art at the time the invention was made since it has been

held that mere duplication of the essential working parts of a device involves only routine skill in the art. Ans. 6.

Appellants state that the remarks made with respect to the patentability of independent claim 1 are equally applicable to the patentability of dependent claim 4. App.Br. 9. We determined the “teaching away” arguments made by Appellants with regard to claim 1 to be unpersuasive.

Appellants also argue that “the prior art as a whole is completely devoid of forming such a laminate structure with repetitive laminates” as recited in claim 4, and “[f]inding a motivation for one of ordinary skill in the art that multiple iterations of the same structure provide redundancy in case of failure is not borne out in the mind of one of ordinary skill in the art,” since “Appellant[s are] unaware of an instance where duplicate roofing systems are applied one on top of another simultaneously to afford redundancy.” Ans. 9. As Appellants have failed to show that the Examiner’s articulated reasoning lacks rational underpinning, we are not persuaded by Appellants’ arguments. Further, as stated by the Examiner, “Finan provides multiple motivations for improvements to roofing systems with multiple layers . . . of the same material composition: improved thermal insulation, high thermal insulation under conditions of prolonged exposure, and improved bond while employing a reduced amount of adhesive bituminous material between insulation and overlying roof felt, retention of excellent bonding under conditions of prolonged exposure, [and] cost reduction of materials.” Ans. 10 (citing Finan, col. 1, ll. 45-67). Appellants have failed to persuasively explain why Finan’s multiple of layers bituminous material 14-20 and roofing felt 15-22 does not provide

an adequate teaching of a laminate structure with repetitive layers. Accordingly, we will therefore sustain the rejection of claim 4, and claim 35 which stands or falls therewith, under 35 U.S.C. § 103(a).

*Rejections of claims 5, 30, and 31 over Semmens, Skolnik, and Fine, claims and 32 and 33 over Semmens, Skolnik, Finan, and Fine, and claim 34 over Semmens, Skolnik, Finan, and Nunley*

Claims 5, 30 and 31 depend, either directly or indirectly, from independent claim 1, and claims 32-34 depend, either directly or indirectly, from independent claim 4. Appellants provide no arguments alleging error in the Examiner's rejections of claims 5 and 30-34. Accordingly, for the reasons discussed above with respect to independent claims 1 and 4, we sustain the Examiner's rejections of claims 5 and 30-34 as being unpatentable.

#### DECISION

We affirm the Examiner's rejections of claims 1, 3-7, and 29-35.

We reverse the Examiner's decision to reject claim 2.

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-IN-PART

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