

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COLAS SOLUTIONS INC.,
Petitioner,

v.

BLACKLIDGE EMULSIONS, INC.,
Patent Owner.

Case IPR2016-01031
Patent 7,503,724 B2

Before MITCHELL G. WEATHERLY, JAMES A. TARTAL, and
TIMOTHY J. GOODSON, *Administrative Patent Judges*.

WEATHERLY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. BACKGROUND

Colas Solutions Inc. (“Colas” or “Petitioner”) filed a petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1–12, 15–20, 23–28, and 31–33 (the “challenged claims”) of U.S. Patent No. 7,503,724 B2 (Ex. 1001, “the ’724 patent”). 35 U.S.C. § 311. Blacklidge Emulsions, Inc. (“Blacklidge” or “Patent Owner”) timely filed a Preliminary Response.

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Paper 6 (“Prelim. Resp.”). We instituted an *inter partes* review of claims 1–12, 15–20, 23–28, and 31–33 on the alleged ground of unpatentability under 35 U.S.C. § 103 for obviousness based on the combination of AEMA¹ and Bardesi² in view of Christensen³, Durand⁴, and/or The Asphalt Handbook⁵. Paper 7, 20 (“Decision on Institution” or “Dec.”).

After institution of trial, Patent Owner filed a Patent Owner Response. (Paper 12, “PO Resp.”), and Petitioner filed a Reply (Paper 20, “Reply”). In addition, Patent Owner filed a Motion for Observation on Cross Examination (Paper 28), to which Petitioner filed a Response (Paper 30). Both parties also filed motions to exclude evidence, and the briefing on those motions included oppositions and replies. *See* Papers 24, 27, 31, 32, 34, and 35. A combined oral hearing in this proceeding and Case IPR2016-01032 was held on August 8, 2017, and a transcript of the hearing is included in the record. Paper 37 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has not shown by a

¹ *Asphalt Emulsion: A Basic Asphalt Emulsion Manual*, Manual Series No. 19 (3d ed.) (Ex. 1002, “AEMA”).

² Bardesi, O.-E. & D.A. Paez, *A Novel Generation of Tack Coat Emulsions to Avoid Adhesion to Tyres*, Third World Congress on Emulsions (Ex. 1003, “Bardesi”).

³ Canadian Patent No. 1 152 795, issued Aug. 30, 1983 (Ex. 1005, “Christensen”).

⁴ U.S. Patent No. 5,769,567, issued June 23, 1998 (Ex. 1004, “Durand”).

⁵ *The Asphalt Handbook*, Manual Series No. 4 (1989 ed.) (Ex. 1008, “The Asphalt Handbook”).

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preponderance of the evidence that any of claims 1–12, 15–20, 23–28, and 31–33 of the '724 patent are unpatentable.

B. RELATED PROCEEDINGS

The parties identified as a related proceeding the co-pending district court proceeding of *Blacklidge Emulsions, Inc. v. Russell Standard Corporation*, Case Number cv 1:12-643, N.D. Ohio. Pet. 1. Colas also identifies as related proceedings the district court proceedings of *Colas Solutions, Inc. v. Blacklidge Emulsions, Inc.*, Case Number 1:16-cv-00548, S.D. Ohio, and *Blacklidge Emulsions, Inc. v. Phillips Oil Co. of Central Ohio, Inc.*, Case Number 2:12-cv-00406, S.D. Ohio, and IPR2016-01032 filed by Colas and relating to U.S. Patent 7,918,624 B2. In addition, *inter partes* reviews challenging all claims of the '724 and '624 patents were instituted in IPR2017-01241 and IPR2017-01242, respectively, and remain pending before the Board. *Asphalt Prods. Unlimited, Inc. v. Blacklidge Emulsions, Inc.*, No. IPR2017-01241 (P.T.A.B. October 24, 2017), Paper 23, 25; *Asphalt Prods. Unlimited, Inc. v. Blacklidge Emulsions, Inc.*, No. IPR2017-01242 (P.T.A.B. October 24, 2017), Paper 23, 26.

C. THE '724 PATENT

The '724 patent relates generally to a method of providing an adhesive tack coat between pavement layers. Ex. 1001, 1:13–16. The method includes applying an asphalt emulsion as the tack coat that, when cured, exhibits a relatively hard surface that resists adhering to the tires of construction vehicles but still functions as an adhesive layer. *Id.* at 4:53–67.

Claims 1, 15, 23, and 31 are the independent claims among the challenged claims, with claims 1, 15, and 31 reciting methods for using a tack coat, *id.* at 14:6–35 (claim 1), 15:24–63 (claim 15), 17:10–18:20 (claim

31), and claim 23 reciting a pavement structure that incorporates the tack layer, *id.* at 16:28–40. Claim 1, which is illustrative, recites:

1. A method for bonding a layer of asphalt pavement material comprising asphalt material to a substrate pavement layer comprising paving material, the paving material selected from the group consisting of asphalt material, soil, clay, sand, shell, cement, limestone, fly ash and mixtures thereof, the method comprising:

providing an emulsified composition which includes at least a first phase of an asphalt composition, a second phase of water, emulsifier and a stabilizer, *the asphalt composition selected to provide a coating having a penetration value less than about 20 dmm and a softening point greater than about 140° F. (60° C.) when applied to the substrate pavement layer and cured;*

applying the emulsified composition which includes the first phase of asphalt composition, and the second phase of water, emulsifier and stabilizer to an exposed surface of the substrate pavement layer at a rate sufficient to provide an exposed coating on the exposed substrate surface, the emulsified composition having an amount of the asphalt composition effective to bond the layer of asphalt pavement material to the substrate pavement layer;

heating the asphalt pavement material to provide a heated pavement material to a temperature sufficient to soften the coating an amount effective to form a bonding surface on the exposed coating; and

applying the heated asphalt pavement material to the exposed coating to form a pavement layer and to soften the exposed coating forming a bond between the pavement layer and the substrate pavement layer.

Id. at 14:6–35 (emphasis added). The emphasized portion of claim 1 identifies characteristics of a cured asphalt emulsion, which is substantively recited in all claims, and on which the dispute between the parties primarily

focuses. The '724 patent describes the particular asphalt emulsion used to make a “low-tracking” tack coat that reduces or avoids the problems associated with the tack coat adhering to the wheels of construction vehicles. *Id.* at 4:53–5:14. Such vehicle tracking “reduces the effectiveness of the tack coat by displacing a portion of the intended volume from the area awaiting a new pavement layer.” *Id.* at 2:14–16. Additionally, “[i]nsufficient adhesion between a new layer of pavement and an existing base course . . . can cause pavement separation and cracking during construction [and] subsequent failures and premature deterioration of the pavement structure.” *Id.* at 2:17–22.

The Specification describes two broad approaches for obtaining a “coating having a penetration value less than about 20 dmm and a softening point greater than about 140° F. (60° C.) when applied to the substrate pavement layer and cured.” The first method involves preparing an emulsion with a “hard pen” asphalt component having a pen value of “from about 5 dmm to 15 dmm pen, with a softening point between about 150° F. (66° C.) and about 160° F. (71° C.)” *Id.* at 7:60–62. The Specification describes asphalt emulsions incorporating asphalt compositions defined by “Performance Grade” values ranging from PG-91 (about 5 pen) to PG-82 (about 40 pen). *Id.* at 9:59–67. Beginning with these hard pen asphalts in the emulsion, the Specification describes resulting “tack coat properties” including pen values of 1–40 dmm and a minimum softening point of 140°F (60°C). *Id.* at 10:37–41. The Specification also describes two examples of “the emulsion of the invention using a 13 dmm pen asphalt,” but does not reveal the pen value or the softening point of the resulting cured tack coat. *Id.* at 12:38–13:65.

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