

**United States Court of Appeals  
for the Federal Circuit**

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**SHOES BY FIREBUG LLC,**  
*Appellant*

v.

**STRIDE RITE CHILDREN'S GROUP, LLC,**  
*Appellee*

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2019-1622, 2019-1623

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2017-01809, IPR2017-01810.

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Decided: June 25, 2020

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WILLIAM ALCIATI, Gardella Grace PA, Washington, DC,  
for appellant.

GAETAN GERVILLE-REACHE, Warner Norcross & Judd  
LLP, Grand Rapids, MI, for appellee. Also represented by  
ROBERT MICHAEL AZZI.

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Before LOURIE, MOORE, and O'MALLEY, *Circuit Judges*.  
LOURIE, *Circuit Judge*.

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Shoes by Firebug LLC (“Firebug”) appeals from two final written decisions of the United States Patent and Trademark Office Patent Trial and Appeal Board (“the Board”) holding claims 1–10 of U.S. Patent 8,992,038 (“’038 patent”) and claims 1–10 of U.S. Patent 9,301,574 (“’574 patent”) unpatentable as obvious. *See Stride Rite Children’s Grp., LLC v. Shoes by Firebug LLC*, No. IPR2017-01809, 2019 WL 236242 (P.T.A.B. Jan. 16, 2019) (“-1809 Decision”); *Stride Rite Children’s Grp., LLC v. Shoes By Firebug LLC*, No. IPR2017-01810, 2019 WL 237069 (P.T.A.B. Jan. 16, 2019) (“-1810 Decision”). Because the Board did not err in its conclusion that the claims would have been obvious over the prior art, we affirm.

#### BACKGROUND

Firebug owns the ’038 and ’574 patents (collectively the “Firebug patents”), which are generally directed to illumination systems for footwear. ’038 patent col. 1 ll. 10–12.<sup>1</sup> According to the patents, while light-up shoes are not new to the footwear industry, there is a wide variety of structural designs for illuminated footwear. In some designs, the light sources are external to the footwear, while in others the lights are integrated into the shoes. The Firebug patents purport to disclose an improved structure for internally illuminated footwear. The patents describe footwear comprising a sole and an upper portion having three layers—a liner, which is the innermost layer, an interfacing layer, and a light-diffusing layer. *Id.* col. 2 l. 45–col. 3 l. 8. The light sources are connected to the interfacing layer between the interfacing layer and the light diffusing layer. *Id.* col. 2 l. 65–col. 3 l. 1. The interfacing layer is a reflective layer that maximizes the amount of light that exits through the light-diffusing layer and is ultimately visible

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<sup>1</sup> Because the ’038 and ’574 patents share a substantially identical written description, all citations are to the ’038 patent unless specified otherwise.

to an observer. *Id.* col. 3 ll. 3–5. Claim 1 of the '038 patent is illustrative:

1. An internally illuminated *textile* footwear comprises:

*a footwear;*

the footwear comprises a sole and an upper;

an illumination system;

the illumination system comprises a power source and a plurality of illumination sources;

a liner;

a structure;

the structure comprises an interfacing layer and a batting;

the structure being adjacently connected to the upper;

the structure being positioned between the liner and the upper;

the interfacing layer being positioned adjacent to the liner;

the batting being adjacently connected to the interfacing layer opposite the liner;

the interfacing layer being reflective;

the batting being light diffusing;

the plurality of illumination sources being adjacently connected to the interfacing layer;

the plurality of illumination sources being positioned between the interfacing layer and the batting;

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the upper being perimetrically connected to the sole;

the liner being positioned interior to the upper;

the upper being light diffusing;

the illumination system being housed within the footwear;

the plurality of illumination sources emitting light, wherein the light first entering the batting and being diffused by the batting, the light diffused by the batting exits the batting, enters the upper, diffused again by the upper and then exits the upper, the twice diffused light creating a visual impression of internal radiant illumination across an outer surface area of the upper.

'038 patent col. 7 ll. 26–57 (emphasis added).

Claim 1 of the '574 patent recites similar subject matter, with slight differences relevant to this appeal.

1. An internally illuminated *textile* footwear comprises:

a sole and an upper;

an illumination system;

the illumination system comprises a power source and a plurality of illumination sources;

a liner;

an interfacing layer;

the interfacing layer being adjacently connected to the upper;

the interfacing layer being positioned between the liner and the upper;

the plurality of illumination sources being adjacently connected to the interfacing layer;

the plurality of illumination sources being positioned between the interfacing layer and the upper;

the upper being perimetrically connected to the sole;

the liner being positioned interior to the upper;

the upper being a light diffusing section;

the illumination system being housed within *the footwear*; and

the plurality of illumination sources emitting light, wherein the light enters the light diffusing section, then exits the upper as diffused light, creating a visual impression of internal radiant illumination across an outer surface of the upper.

'574 patent col. 9 l. 47–col. 10 l. 5 (emphasis added).

Stride Rite Children's Group, LLC ("Stride Rite") is a competitor to Firebug in the children's footwear market. Firebug asserted the '038 and '574 patents against Stride Rite in the United States District Court for the Eastern District of Texas. *See* Complaint, *Shoes by Firebug LLC v. Stride Rite Children's Grp., LLC*, No. 4:16-cv-00899 (E.D. Tex. Nov. 22, 2016), ECF No. 1. Stride Rite in response filed petitions for *inter partes* review of claims 1–10 of the '038 patent and claims 1–10 of the '574 patent, alleging that the challenged claims would have been obvious over U.S. Patent 5,894,686 ("Parker") in view of U.S. Patent App. Pub. 2011/0271558 ("Rosko") and other references.

Parker teaches a light distribution system for use on the upper portion of a shoe and discloses a layer of woven or non-woven optical fibers disposed on a "back reflector," which reflects light from the optical fibers back through the outer layer of the shoe. Parker, col. 4 ll. 18–34. Rosko

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