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United States Patent Dua et al.

(54) ARTICLE OF FOOTWEAR HAVING A FLAT KNIT UPPER CONSTRUCTION OR OTHER UPPER CONSTRUCTION

(75) Inventors: **Bhupesh Dua**, Portland, OR (US);

Edward Nathaniel Thomas, Portland,

OR (US)

(73) Assignee: NIKE, Inc., Beaverton, OR (US)

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(2006.01) (2006.01)

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

2,330,199 A	9/1943	Basch
2,376,399 A	* 5/1945	Yandell 36/10
2,904,980 A	* 9/1959	Stinson 66/171
3,402,323 A	9/1968	Longstreth
3,583,081 A	* 6/1971	Hayashi 36/45
3,603,006 A	* 9/1971	Davenport et al 36/11.5
4,646,727 A	* 3/1987	Chambers 602/3
4,785,558 A	11/1988	Shiomura
4,878,504 A	* 11/1989	Nelson 602/27
4,998,722 A	* 3/1991	Scott 482/79

(10) Patent No.: US 7,774,956 B2 (45) Date of Patent: Aug. 17, 2010

5,067,260	A *	11/1991	Jenkins, Jr 36/7.1 R
5,257,969	A	11/1993	Mance
D346,686	\mathbf{S}	5/1994	Hatfield
5,377,430	A *	1/1995	Hatfield et al 36/51
6,754,983	B2 *	6/2004	Hatfield et al 36/45
6,931,762	B1 *	8/2005	Dua 36/9 R
2005/0115284	A1	6/2005	Dua
2005/0193592	A1	9/2005	Dua et al.
2005/0284000	A1	12/2005	Kerns

OTHER PUBLICATIONS

International Search report in corresponding PCT application, International Application No. PCT/US2007/084013, mailed Apr. 4, 2008. International Preliminary Report on Patentability in corresponding PCT Application, International Application No. PCT/US2007/084013, mailed May 22, 2009.

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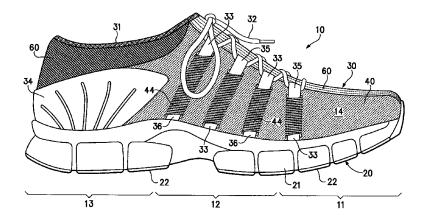
* cited by examiner

Primary Examiner—Ted Kavanaugh (74) Attorney, Agent, or Firm—Banner & Witcoff, Ltd.

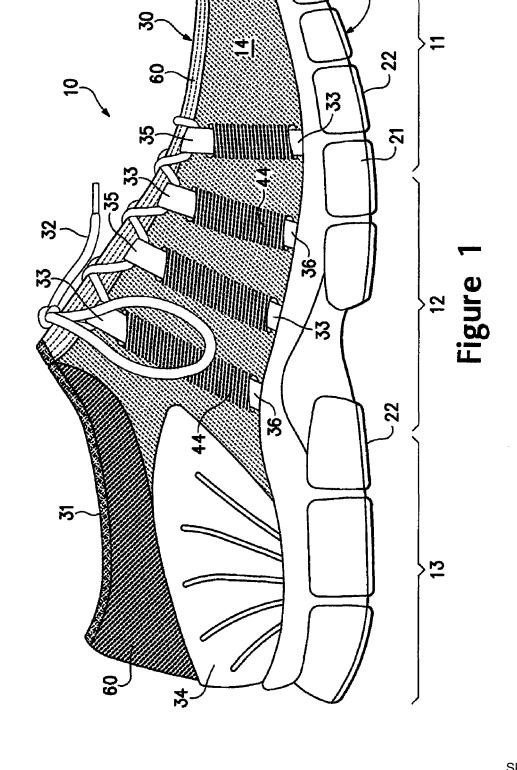
(57) ABSTRACT

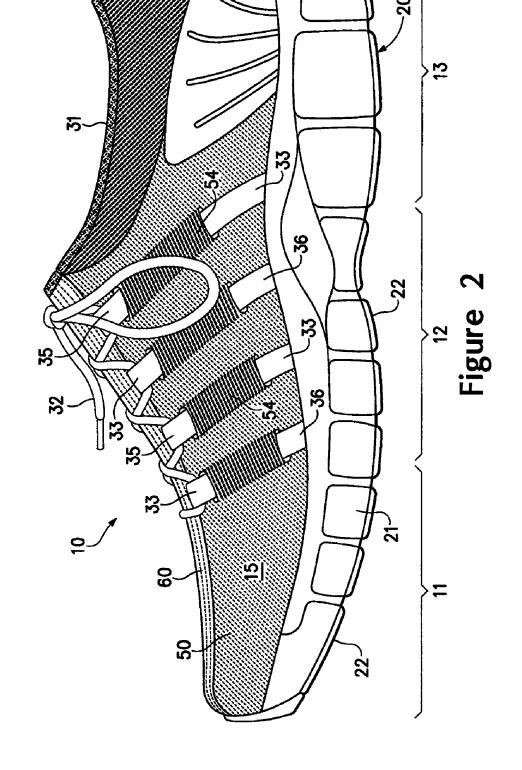
Flat knitting allows production of textile structures (e.g., for use in footwear uppers) of a final desired shape such that textile cutting steps can be avoided. Flat knitted elements also can be formed directly in desired three dimensional shapes, which can help avoid the need to use additional support structures (e.g., in footwear construction). By selectively placing multiple different yarns and/or stitch patterns at multiple different locations in the overall structure during the knitting process, flat knitted products may have multiple different physical properties (e.g., different stretchability, different moisture management capabilities, etc.) at multiple different locations or zones within a single, unitary construction (e.g., different properties at different zones or locations within a single footwear structure). Additionally, flat knitting can be used to produce pockets, tunnels, or other layered structures in the final product.

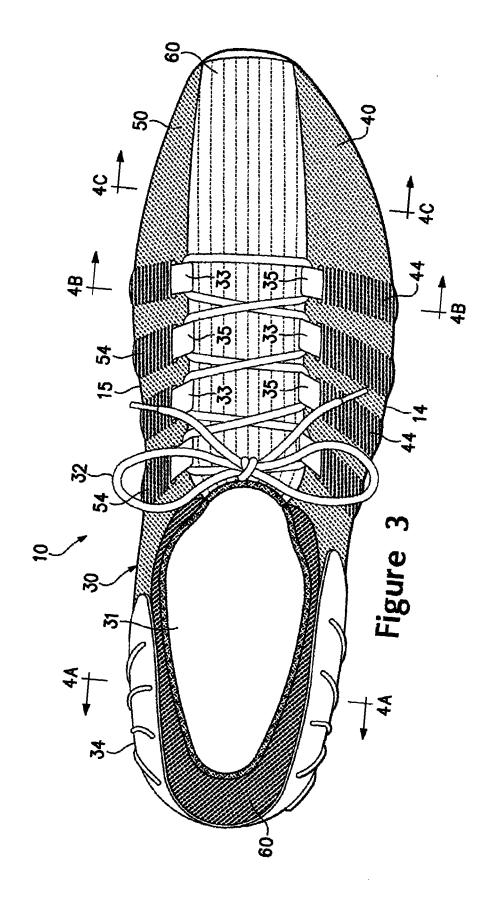
10 Claims, 18 Drawing Sheets



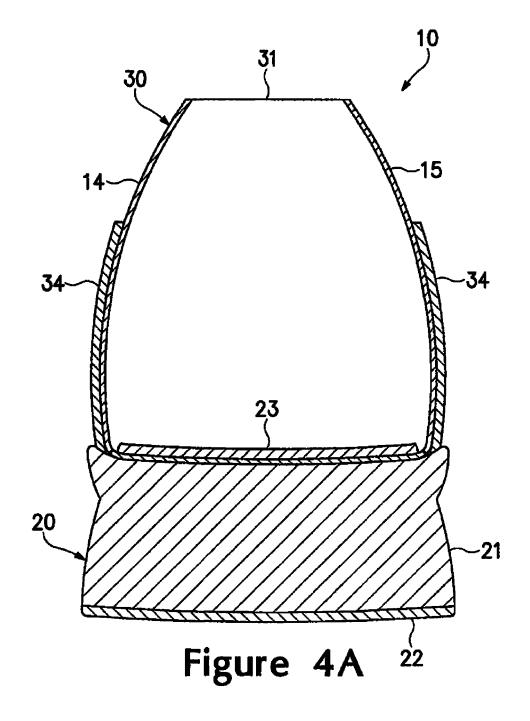














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