



US010245798B2

(12) **United States Patent**
Wan

(10) **Patent No.:** **US 10,245,798 B2**

(45) **Date of Patent:** ***Apr. 2, 2019**

(54) **METHOD FOR MANUFACTURING A MIDSOLE FORMED FROM TWO PREFORMS**

44/5627 (2013.01); *B29K 2023/083* (2013.01);
B29K 2105/253 (2013.01); *B29K 2995/0021*
(2013.01); *B29L 2031/504* (2013.01)

(71) Applicant: **NIKE, Inc.**, Beaverton, OR (US)

(58) **Field of Classification Search**

CPC B29C 44/3465; B29C 44/3476; B29C 44/3496; B29C 44/0453; B29C 44/08; B29C 44/04; B29C 44/5627; B29C 44/3415; A43B 13/125; A43B 13/12

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See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 173 days.

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This patent is subject to a terminal disclaimer.

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(21) Appl. No.: **15/353,903**

Primary Examiner — Joseph S Del Sole

(22) Filed: **Nov. 17, 2016**

Assistant Examiner — Mohamed K Ahmed Ali

(65) **Prior Publication Data**

US 2018/0133995 A1 May 17, 2018

(74) *Attorney, Agent, or Firm* — Banner & Witcoff, Ltd.

(51) **Int. Cl.**

B29D 35/14 (2010.01)
B29C 44/02 (2006.01)
B29C 44/12 (2006.01)
B29C 44/34 (2006.01)
B29C 44/56 (2006.01)
B29D 35/04 (2010.01)
B29C 44/04 (2006.01)
B29C 44/08 (2006.01)
A43B 13/12 (2006.01)
B29K 23/00 (2006.01)
B29K 105/00 (2006.01)
B29L 31/50 (2006.01)

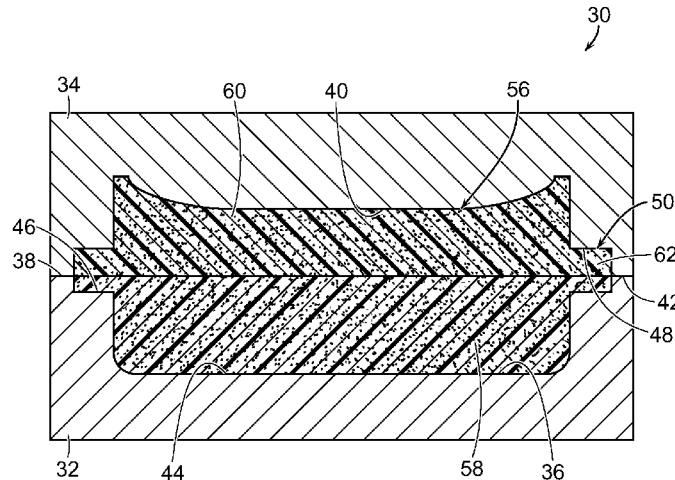
(57) **ABSTRACT**

A method of manufacturing a midsole for an article of footwear includes placing first and second preforms in a first mold, closing and heating the first mold to produce a midsole preform with a peripheral preform flange, removing the midsole preform from the first mold and allowing it to further expand and cool, placing the midsole preform in a second mold, with a volume of a midsole recess of the second mold being less than a volume of the midsole preform, and a volume of a peripheral recess of the second mold being less than a volume of the peripheral preform flange, closing the second mold thereby compressing the midsole preform and the peripheral preform flange, and heating the second mold to form a midsole with a peripheral flange, allowing the second mold to cool, opening the second mold, and cutting away a peripheral flange of the midsole.

(52) **U.S. Cl.**

CPC *B29D 35/142* (2013.01); *A43B 13/127* (2013.01); *B29C 44/04* (2013.01); *B29C 44/08* (2013.01); *B29C 44/3415* (2013.01); *B29C*

15 Claims, 4 Drawing Sheets



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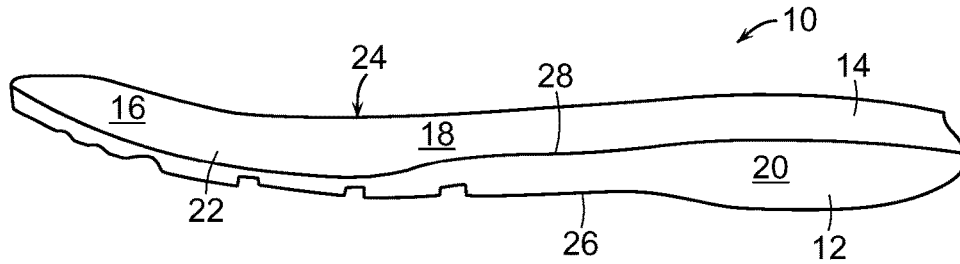


FIG. 1

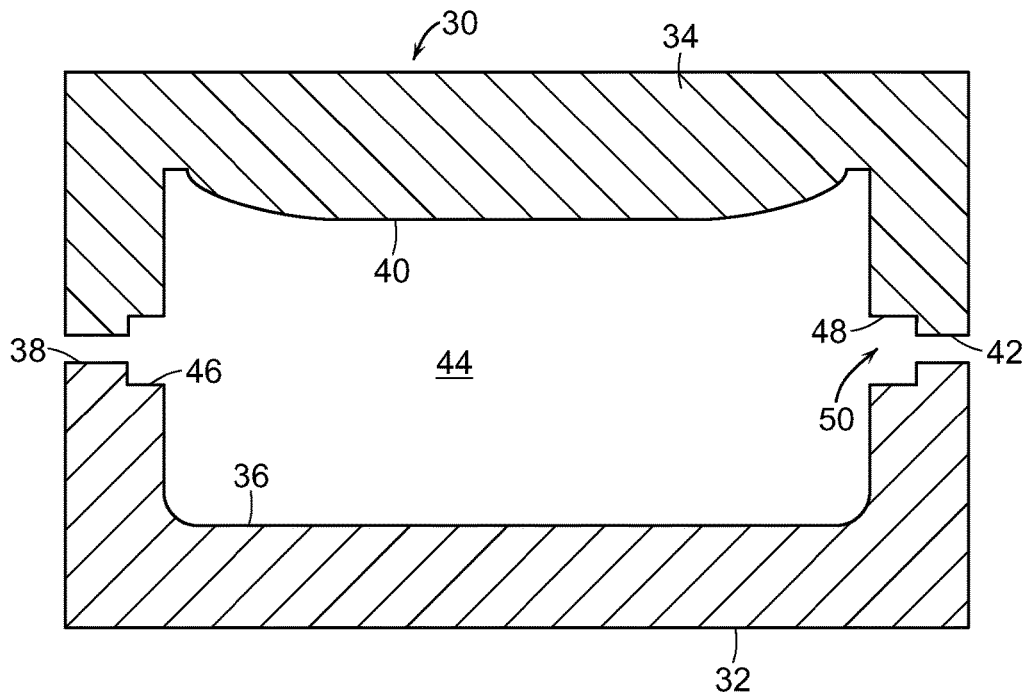


FIG. 2

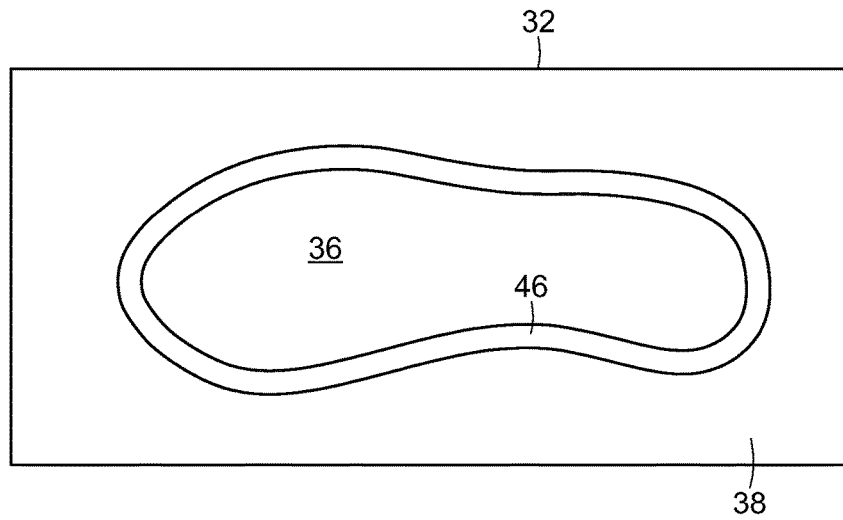


FIG. 3

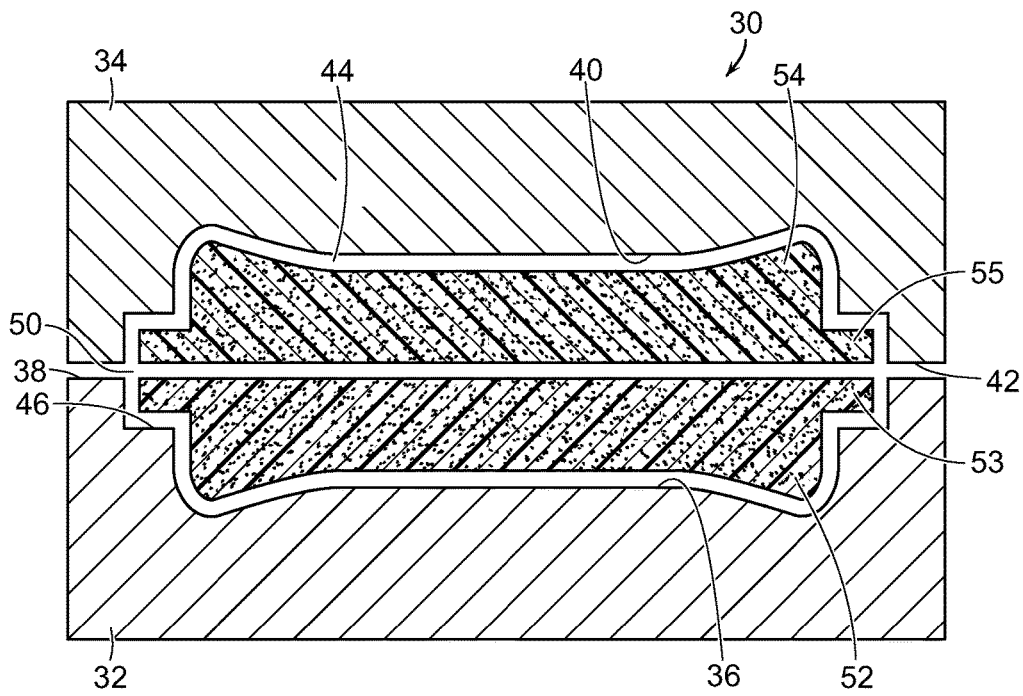


FIG. 4

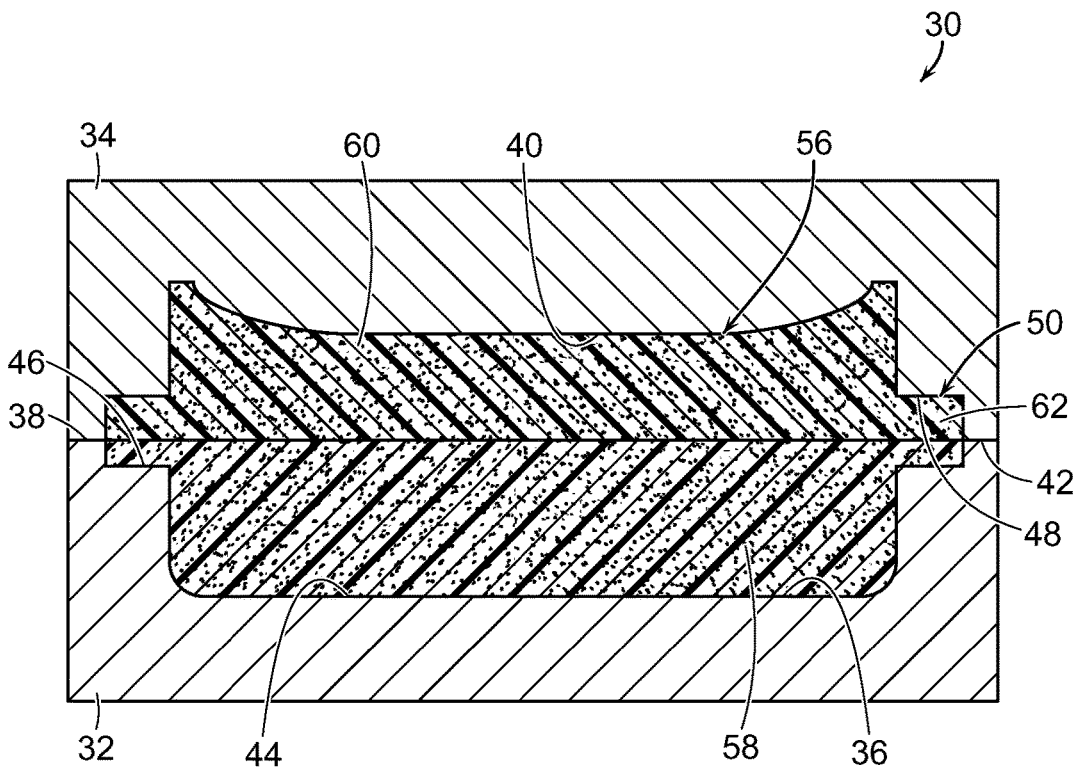


FIG. 5

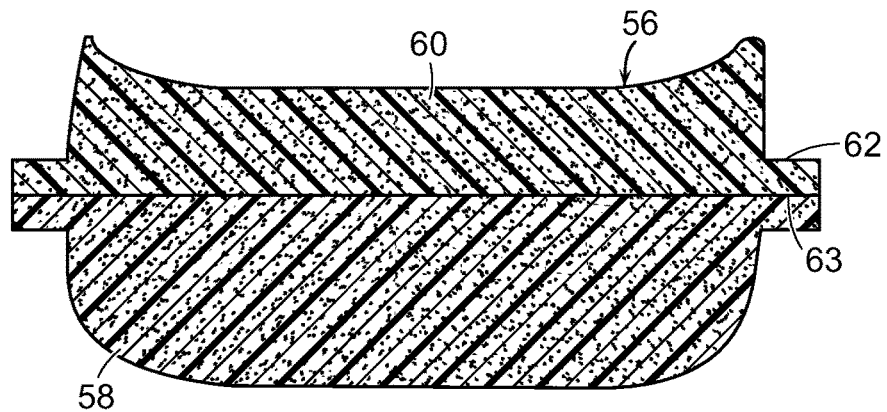


FIG. 6

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