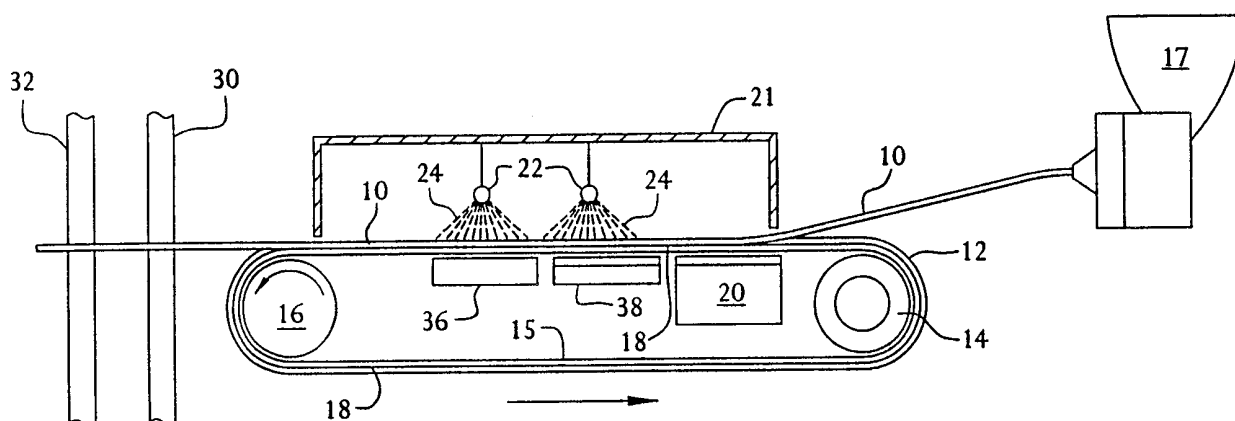




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: APPARATUS AND METHOD FOR CONTINUOUS VACUUM FORMING SHAPED POLYMERIC ARTICLES



## (57) Abstract

This invention relates to methods and apparatus for manufacturing shaped polymeric articles by substantially continuous vacuum forming. The method includes providing a sheet (10) of hot polymeric material which is disposed onto a rotating belt (18) having a mold impression (11). Vacuum pressure is applied to the polymeric material through the belt (18) so as to draw the hot polymeric material into intimate contact with the mold impression (11) to form a patterned sheet portion and a remaining sheet portion. This method thereafter cools at least the patterned sheet portion below a heat deflection temperature of the polymeric material, forms the remaining sheet portion, and then cools the remaining sheet portion below the heat deflection temperature so that features other than the central pattern, such as nail and butt edges, can be mechanically worked into the polymeric sheet (10).

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/26841

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :B29C 51/10, 51/24, 51/42

US CL :264/522, 557, 211.13, 211.18, 327; 425/388, 71

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 264/522, 557, 211.13, 211.18, 327, 547, 555, 571, 210.1, 148, 156; 425/388, 71, 818, Dig.60

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

BRS

search terms: differential adj (heating or cooling)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,635,614 A (LONG et al) 18 January 1972, col. 1, lines 31-55.	1-20
Y	US 5,314,325 A (BOSLER) 24 May 1994, see entire document.	1-20
Y	US 5,597,185 A (BRAY et al) 28 January 1997, col. 3, lines 49-67 and col. 4, lines 1-8.	1-15
Y	US 5,505,612 A (MERO et al) 09 April 1996, see entire document.	1-15
A	US 3,577,484 A (JACOBSON) 04 May 1971, see entire document.	1-15
A	US 4,128,369 A (KEMERER et al) 05 December 1978, see entire document.	1-20



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