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(12) **United States Patent**
Davis et al.(10) **Patent No.:** **US 8,614,271 B2**
(45) **Date of Patent:** **Dec. 24, 2013**(54) **PROPYLENE-ALPHA-OLEFIN POLYMERS,
HOT MELT ADHESIVE COMPOSITIONS
THAT INCLUDE
PROPYLENE-ALPHA-OLEFIN POLYMERS
AND ARTICLES THAT INCLUDE THE SAME**(75) Inventors: **Kevin Davis**, North St. Paul, MN (US);
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patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.(21) Appl. No.: **13/529,244**(22) Filed: **Jun. 21, 2012**(65) **Prior Publication Data**

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27, 2011.(51) **Int. Cl.**
C08L 91/06 (2006.01)(52) **U.S. Cl.**
USPC **524/487**; 524/489(58) **Field of Classification Search**
USPC 524/487-489
See application file for complete search history.(56) **References Cited**

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Johnson(57) **ABSTRACT**A propylene-alpha-olefin polymer that includes at least 50%
by weight propylene, has a ratio of z average molecular
weight (Mz) to number average molecular weight (Mw) (Mz/
Mw) from greater than 20 to no greater than 50, and a ratio of
Mz to weight average molecular weight (Mw) (Mz/Mw) of
greater than 2.5, and exhibits a viscosity of no greater than
2,500 centipoise at 190° C., and a hot melt adhesive compo-
sition that includes the propylene-alpha-olefin polymer, a first
wax consisting of a functionalized wax, and a second wax
different from the first wax, the adhesive composition exhib-
iting a viscosity of no greater than 2,500 centipoise at 177° C.**39 Claims, No Drawings**