



(19) **United States**

(12) **Patent Application Publication**
Wittkopp et al.

(10) **Pub. No.: US 2012/0149523 A1**
(43) **Pub. Date: Jun. 14, 2012**

(54) **MULTI-SPEED TRANSMISSION**

Publication Classification

(75) Inventors: **Scott H. Wittkopp**, Ypsilanti, MI (US); **Andrew W. Phillips**, Rochester, MI (US); **James M. Hart**, Belleville, MI (US); **Edward W. Mellet**, Rochester Hills, MI (US)

(51) **Int. Cl.**
F16H 3/44 (2006.01)
F16H 57/10 (2006.01)
(52) **U.S. Cl.** **475/271; 475/296**

(73) Assignee: **GM GLOBAL TECHNOLOGY OPERATIONS LLC**, DETROIT, MI (US)

(57) **ABSTRACT**

A transmission of the present invention has an input member, an output member, four planetary gear sets, a plurality of coupling members and a plurality of torque transmitting devices. Each of the planetary gear sets includes first, second and third members. The torque transmitting devices include clutches and brakes. The torque transmitting devices are each selectively engageable in combinations of at least two to establish at least ten forward speed ratios and at least one reverse speed ratio.

(21) Appl. No.: **12/966,811**

(22) Filed: **Dec. 13, 2010**

