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Gilman

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(54) **VIBRATORY CONVEYOR**

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(52) **U.S. Cl.** **198/751**; 198/761; 198/769; 198/763

(58) **Field of Search** 198/769, 761, 198/763, 751

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,032,175 * 5/1962 Thomas 198/763
4,216,416 * 8/1980 Grace 198/751
4,313,535 * 2/1982 Carmichael 198/763
4,378,064 * 3/1983 Brown 198/769
5,054,606 * 10/1991 Musschoot 198/751
5,868,241 * 2/1999 Pellegrino 198/763

FOREIGN PATENT DOCUMENTS

WO 86/02058 * 4/1986 (WO) 198/751

* cited by examiner

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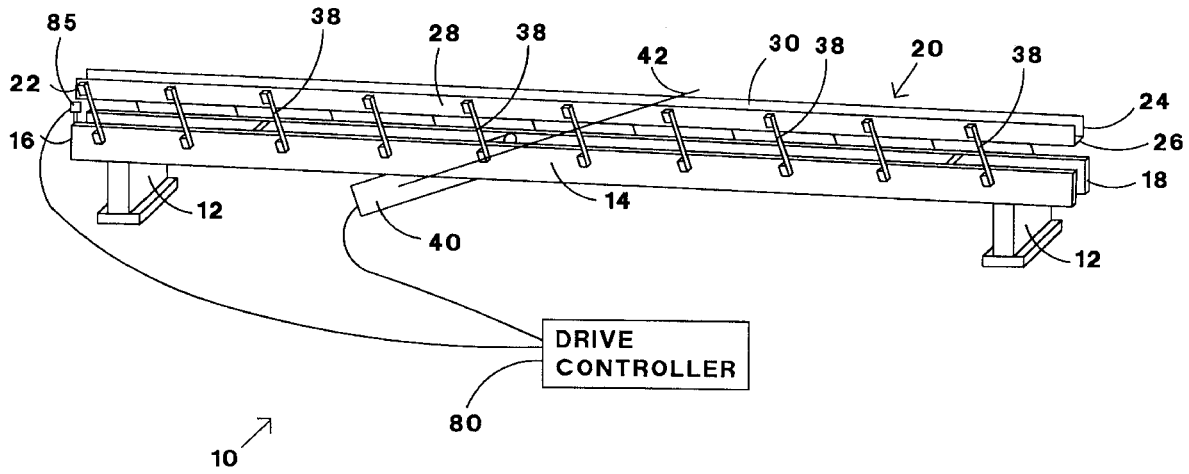
(57) **ABSTRACT**

A conveying system with a frame supporting a conveying member suitable to move products thereon. A drive, which is preferably an electromagnetic drive having a mass that vibrates back and forth along a substantially straight path, is connected to the frame.

4 Claims, 6 Drawing Sheets