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Sinclair

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- (54) **MULTI-STORY WATER DISTRIBUTION SYSTEM**
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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 375 days.

5,032,290 A *	7/1991	Yamagata et al.	210/747
5,183,102 A	2/1993	Clark	
5,425,503 A *	6/1995	Corso	237/63
5,540,555 A *	7/1996	Corso et al.	417/44.2
6,125,880 A *	10/2000	Szilagy	137/340
6,715,691 B2 *	4/2004	Park et al.	237/8 A
2004/0026075 A1 *	2/2004	Park et al.	165/218

FOREIGN PATENT DOCUMENTS

CA 2082718 4/1997

* cited by examiner

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- (51) **Int. Cl.**
F16L 5/00 (2006.01)
- (52) **U.S. Cl.** **137/357; 137/563**
- (58) **Field of Classification Search** 137/563, 137/357, 505, 341; 165/244; 237/8 R, 63
See application file for complete search history.

- (56) **References Cited**
U.S. PATENT DOCUMENTS

3,617,699 A *	11/1971	Othmer	392/469
3,692,047 A *	9/1972	Camp	137/495
5,022,231 A *	6/1991	Martinez, Jr.	62/99

- (57) **ABSTRACT**

A method and system for the distribution of water in a high rise building is provided using a minimum number of piping risers. The system has a domestic cold water riser, and a domestic hot water supply riser and a return riser. At each serviced floor, a cold water supply main extends from the domestic cold water riser and a hot water supply main extends from the domestic hot water supply riser. On each floor at which riser pressure is higher than domestic use pressures, a valve reduces the pressure of the entire cold water supply main to domestic use pressures. One or more valves at each of one or more suites on the floor reduce the pressure of the hot water to each suite, leaving the hot water supply main for the floor at full riser pressure. Coupling fan-coils with chilled water supply and the full pressure domestic hot water provides an efficient piping system for both environmental controls and domestic hot water use. Regular and periodic circulation through fan-coils avoid stagnation of the domestic hot water supply.

17 Claims, 10 Drawing Sheets

