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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

David J. Kappas

Director of the United States Patent and Trademark Office



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(54) **DOUBLE-GLAZED THERMOINSULATED EXTERNAL WALL**

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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 1025 days.

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,281,071 A *	4/1942	Knudsen	49/64
2,751,839 A *	6/1956	Moore	454/212
3,259,053 A *	7/1966	Steel	454/200
4,274,469 A *	6/1981	Kuyper et al.	160/107
5,822,934 A *	10/1998	O'Donnell	52/209
6,374,557 B1 *	4/2002	O'Donnell	52/209
6,430,894 B1 *	8/2002	Chae et al.	52/786.1
7,083,110 B2 *	8/2006	Kim et al.	237/46
7,270,600 B2 *	9/2007	Kim et al.	454/198
2002/0100236 A1 *	8/2002	Kuipers et al.	52/239
2002/0118437 A1 *	8/2002	Rukavina et al.	359/275

FOREIGN PATENT DOCUMENTS

DE	26 08 557	9/1977
DE	19849 006	10/1999
JP	60129543 A *	7/1985

(Continued)

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(57)

ABSTRACT

Double-glazed thermoinsulated external wall particularly for windows or the facade of buildings, constituted by an outer pane and an inner pane, parallel to one another and defining a space, wherein the wall comprises a forced air circulation unit in the space.

14 Claims, 7 Drawing Sheets

