

Title (en)
SOLAR AIR HEATING SYSTEM.

Title (de)
VON SONNENWÄRME BEHEIZTES LUFTAUFWERMSYSTEM.

Title (fr)
SYSTEME DE CHAUFFAGE SOLAIRE D'AIR.

Publication
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Application
EP 84902673 A 19840627

Priority
US 50813083 A 19830627

Abstract (en)
[origin: WO8500212A1] A solar air heating system (10) especially adapted for residences where nighttime heating is important. Solar air heating systems have relatively low efficiency, especially when designed to store energy. The parent invention is an improvement to this type of system. The system comprises a solar heat collector plate (43, 60, or 76), an energy storage medium in a subdivided chamber (34) or a structure (64), and a heat exchange means consisting of fins (33, or 44) or walls (65). The fins or walls extend from the chamber or structure wall into the storage medium to subdivide the chamber or the structure to improve the heat exchange relationships of the storage material with its surroundings. The panel is adapted to be incorporated into existing house air heating systems. Air from an enclosure (14) to be heated is drawn through the collector panel (12) by a fan or by natural convection where it extracts heat from the collector plate (43, 60 or 76) and the energy storage medium. The heated air then flows back to the enclosure. High solar collector efficiency is realized because of the unique design of the panel which thermally ties the temperature of a solar collector plate directly to a large thermal mass of energy storage medium. High system efficiency is also realized since an air blower motor is not required to transfer the energy from the collector to the storage volume. Low summer time stagnation temperatures are realized due to the collector plate/energy storage volume relationship.

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