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System and method for controlling the temperature of a room

Abstract

The present invention discloses a system and method for controlling the temperature of a room. The system comprises of holes drilled on the walls near to the ceiling and the floor, and shutters mounted on the walls to cover the holes. Closing and opening the shutters controls temperature of the room.

Background of the invention

Energy bills in homes here have surged over the past 10 years and a major reason for this is that more families are using air conditioners (11th August 2001, The Straits Times). Singapore's air-con bill added up to $768 million for homes and offices in 1999. In 1988, only 19 per cent, or about one in five households had aircons but, in 1998, the figures rose to 58 per cent, or about six in 10 households, a three-fold increase. According to an EMA survey, it accounted for a third of energy bills in four-room flats with an air-con and almost half the bill for those in five-room flats and private apartments.

The present invention seeks to lower energy usage in air conditioning by providing a means to control the room temperature using the principles of physics of hot air rises and cold air sinks.

Summary of the invention

The present invention is directed to a system and method for controlling the room temperature without using electricity-powered fan or air conditioners.

In accordance with the purposes of the present invention, as embodied and broadly described, the invention provides a system for controlling the

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temperature of a room. Holes are created on the walls of a room near to the ceiling and the floor. Shutters are mounted on the walls to cover the drilled holes. Closing the shutters will block the air from flowing through the holes while opening the shutters will let the air to flow freely through the holes.

In another embodiment, the invention provides a method for controlling the temperature of a room. Lowering the temperature of the room are achieved by opening the shutters near to the ceiling and closing the shutters near to the floor. Raising the temperature of the room are achieved by closing shutters near to the ceiling and opening the shutters near to the floor.

Brief description of the drawings

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate an embodiment of the invention and, together with the description, serve to explain the objects, advantages, and principles of the invention.

Figure 1 is a diagram illustrating the concepts of different layers of air temperature in a room, where the hotter air are above cooler air.

Figure 2 is a diagram illustrating the system for controlling the room temperature, which comprises of holes drilled on the walls near to the ceiling and the floor, and shutters mounted on the walls to cover the holes.

Figure 3 is a diagram illustrating the method for lowering the room temperature, where the shutters near to the ceiling are opened to let the warmer air on the upper layer to flow freely through the holes, and the shutters near to the floor are closed to block the cooler air on the lower layer from flowing through the holes.

Figure 4 is a diagram illustrating the method for raising the room temperature, where the shutters near to the ceiling are closed to block the warmer air on the upper layer from flowing through the holes, and the shutters near to the floor are opened to let the cooler air on the lower layer to flow freely through the holes.

Detail Description of the Preferred Embodiments

In general terms, the present invention is directed to a system and method for controlling the room temperature without using means of electrical fan or air-conditioner in order to reduce energy usage.

From the principle of physics, hot air rises and cold air sinks. Hot air in a room will rise to the ceiling while cold air will sink to the floor. Referring to figure 1, air that is nearer to the ceiling will have a higher temperature then the air near to the floor. From this principle, it can be deduced that the hotter air will flow out of a room if there are opening near to the ceiling, and cold air will flow out of the room if there are openings near to the floor. If hot air can be flow out of the room and cold air is trapped in the room, the temperature of the room will be lowered. If cold air can be flow out of the room and hot air is trapped in the room, the temperature will be raised.

Referring to figure 2, the system for controlling the room temperature includes holes drilled on the walls of a room near to the ceiling and the floor, and shutters mounted on the walls to enclose holes. Closing the shutters will block the air from flowing through the holes while opening the shutters will let the air to flow freely through the holes.

Referring to Figure 3, lowering the temperature of the room can be achieve by opening the shutter near to the ceiling and closing the shutter near to the floor. Opening the shutter near to the ceiling enable the hot air near to the ceiling to flow out of the shutter, while closing the shutter near to the floor will trap the cold

air near to the floor. Setting the shutter in such a state cools the room, since only cold air is retained in the room.

Referring to Figure 4, raising the temperature of the room can be achieved by opening the shutter near to the floor and closing the shutter near to the ceiling. Opening the shutter near to the floor enable the cold air near to the floor to flow out of the room, while closing the shutter near to the ceiling will trap the hot air near to the ceiling. Setting the shutter in such a state will raised the temperature of the room, since only hot air is retained in the room.

Claim

What is claimed is:

1. A system of controlling the temperature of a room comprising:
   Creating holes in the walls of a room, where some of the holes are located near to the ceiling and some near to the floors.
   Enclosing the holes on the walls with shutters, where the shutters can be opened to let the air from passing through, or can be closed to blocked the air from passing through.

2. A method of controlling the temperature of a room comprising:
   Setting the shutters in the state to lower the room temperature.
   Setting the shutters in the state to raise the room temperature.

3. The method claim 2 where the temperature of a room is lowered by opening the shutters near to the ceiling and closing the shutters near to the floor.

4. The method claim 2 where the temperature of a room is raised by opening the shutters near to the floor and closing the shutters near to the ceiling.