COLOR WINDOWS AND DOORS APPARATUS

Abstract: Provided is a color window and door system. The color window and door system includes a: a frame having a shape of about rectangle; a glass disposed at an inner circumference of the system frame; and a paired glass located at an inner side of the glass frame and configured of a pair of glasses which are separated at a predetermined distance to form an inside space, wherein the inside space formed at the paired glass is filled with a liquid.
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
Description

COLOR WINDOWS AND DOORS APPARATUS

Technical Field

The present invention relates to a color window and door system; and more particularly, to a color window and door system for not only insulating an indoor environment from heat and sound but also cutting off an ultraviolet ray while providing an aesthetic pleasure.

Background Art

A window and door system is a movable structure installed in a wall to distinguish an indoor space from an outdoor space, such as a paper-covered sliding door or a sliding door papered on both sides. The window and door system is generally provided as attachable and permits opening and closing.

The window and door system is constructed in a wall to protect the indoor environment from various weather conditions or from strangers. The window and door system also insulates the indoor environment from external noises and isolates the light and sound within the indoor space. The window and door system, furthermore, admits light and airs. The window and door system distinguishes the indoor space from the outdoor place with being closed.

Various structures such as an office building, a house and a condo, generally have various window and door systems to admit the light and the air.

Conventional window and door systems are generally manufactured with a predetermined single color glass. Therefore, if a resident of a house wants to change a color of a conventional window and door system according to a season or an atmosphere, the entire window and door system must be took off from the wall and re-installs a new window and door system with a desired colored glass at the wall. Therefore, it requires a great expense and manpower, and takes a long time to change the color of the conventional window and door system.

The conventional window and door system may transmit most of lights including an ultraviolet ray although the conventional window and door system has the heat and sound insulating characteristics. In order to block the ultraviolet ray, a blind or a curtain is additionally installed with the conventional window and door system. Alternatively, a semitransparent coating sheet may be adhered on the glass of the conventional window and door system to block the ultraviolet ray.

Disclosure of Invention

Technical Problem

It is, therefore, an object of the present invention to provide a color window and
door system for not only insulating an indoor environment from heat and sound but also cutting off an ultraviolet ray while providing an aesthetic pleasure.

Technical Solution

[8] In accordance with one aspect of the present invention, there is a color window and door system including: a system frame having a shape of about rectangle; a glass frame disposed at an inner circumference of the system frame; and a paired glass fixed at an inner side of the glass frame and configured of a pair of glasses which are separated at a predetermined distance to form an inside space, wherein the inside space formed at the paired glass is filled with a liquid.

[9] The color window and door system may further include a liquid injection hole formed at an upper portion of the paired glass to inject the liquid into the inside space.

[10] The liquid may have a predetermined color, and have a characteristic not frozen at -50°C.


Advantageous Effects

[12] The color window and door system according to the present invention cuts off more sound by using a liquid having higher density than a gas.

[13] The color window and door system according to the present invention effectively block the ultraviolet ray and provides the aesthetic pleasure by injecting a liquid having a desired color into an inside space formed at a paired glass thereof.

[14] Furthermore, the color window and door system according to the present invention allows a user to easily change the color thereof according to a color of peripheral building, a season or an indoor atmosphere by replacing the liquid in the paired glass with another liquid having a desired color.

Brief Description of the Drawings

[15] The above and other objects and features of the present invention will become apparent from the following description of the preferred embodiments given in conjunction with the accompanying drawings, in which:

[16] FIG. 1 is a perspective view of a color window and door system according to an embodiment of the present invention;

[17] FIG. 2 is a perspective view of the paired glass shown in FIG. 1; and

[18] FIG. 3 is a cross-sectional view of FIG. 1 taken along a line III-III.

Best Mode for Carrying Out the Invention

[19] Other objects and aspects of the invention will become apparent from the following description of the embodiments with reference to the accompanying drawings, which is set forth hereinafter.

[20] FIG. 1 is a perspective view of a color window and door system according to an
embodiment of the present invention.

[21] Referring to FIG. 1, the color window and door system 100 includes a system frame 110, a glass frame 120, and a paired glass 130.

[22] The system frame 110 has a shape of about rectangle to secure a space to mount the color window and door system. Such a system frame 110 may be disposed at an outer wall. Or, the system frame 110 may be mounted at an inner wall for an interior decoration. The system frame 110 may be made of an aluminum, a synthetic resin or a wood.

[23] The glass frame 120 is disposed at an inside circumference of the system frame 110. Such a glass frame 130 may be made of same material of the system frame 110. Alternatively, the glass frame 120 may be integrally formed with the system frame 110.

[24] The paired glass 130 is fixed at an inside of the system frame 120 and configured of a pair of glasses 131 arranged to be separated at a predetermined distance.

[25] As shown, the paired glass 130 is fixed at the glass frame 120 in the present embodiment. However, the paired glass 130 may be slidably installed in the glass frame 120. It is obvious to those skilled in the art that various changes and modifications may be made without departing from the scope of the invention.

[26] FIG. 2 is a perspective view of the paired glass shown in FIG. 1, and FIG. 3 is a cross-sectional view of FIG. 1 taken along a line 111-111.

[27] As shown in FIG. 2, the paired glass 130 includes a pair of glasses 131 separated at a predetermined distance, for example, as long as a twice of a thickness of a glass, to form an inside space.

[28] That is, a pair of the glasses 131 are arranged to be separated from one another at a predetermined distance to form an inside space. It is preferable that the paired glass 130 is configured of two 5mm thick glasses arranged to be separated at a 6mm distance. Accordingly, the thickness of the paired glass 131 is about 16mm.

[29] That is, the paired glass 130 has a double structure as described above to improve sound absorption and warmth retentivity. Therefore, the paired glass 130 allows the window and door system according to the present invention to have the enhanced heat and sound insulation characteristics.

[30] After arranging a pair of the glasses 131, a glass brim 132 is welded along the edge of the glasses 131 to seal the inside space formed by the glasses 131. The glass brim 132 may be made of a metal or a plastic.

[31] The edge of the glasses 131 may be melted to join the edge of the glasses 131 together instead of using the glass brim 132 in order to seal the inside space formed of the glasses 131. As described above, the edges of the two glasses 130 may be welded through various methods to form and seal the inside space thereof.

[32] It is preferable to form a liquid injection hole 133 at an upper portion of the paired
glass 130 to inject a predetermined liquid into the inside space formed between the pair of the glasses 131. The liquid injection hole 133 is connected to the inside space of the paired glass 130 and it is preferable to form the liquid injection hole 133 at the glass brim 132. Also, it is preferable that the liquid injection hole 133 is provided with a cap in order to close the liquid injection hole 133.

As shown in FIG. 3, the inside space formed at the paired glass 130 is filled with a predetermined liquid 134.

The predetermined liquid 134 is injected through the liquid injection hole 133 to fill the inside space formed at the paired glass 130. It is preferable that the predetermined liquid 134 has a predetermined color. That is, the color window and door system 100 is provided by filling the inside space of the pair of the glasses 131 with the predetermined color liquid 134.

Herein, it is preferable to use a liquid having a characteristic not frozen at a cold weather for example, -50°C as the predetermined liquid 134. For example, a break oil may be used as the liquid 134.

Various colored liquids may be created by mixing coloring matters with a transparent break oil. Such a colored break oil may be injected to the paired glass 130 as the liquid 134.

The liquid injection hole 133 allows a user to conveniently replace the liquid 134 in the inside space of the paired glass 130 with new liquids having various colors by draining the liquid 134 in the inside space and injecting the new liquid 134 having a desired color through the liquid injection hole 133. Therefore, the user can conveniently change the color of the color window and door system according to a season or an atmosphere. That is, the color of the color window system 100 according to the present invention can be easily changed without taking out of the entire window and door system from the wall and re-installing a new window and door system at the wall by replacing the liquid in the inside space of the paired glass 130 with a new liquid having a desired color through the liquid injection hole 133.

Furthermore, the liquid 134 in the inside space of the paired glass 130 enhances the sound absorption of the window and door system 100 according to the present invention. The sound transmits through a medium. If the medium has a greater density, the medium cuts off more sound. That is, the sound absorption of the window and door system 100 according to the present invention is enhanced by filling the inside space of the window system 100 with the liquid which has a greater density than air.

Also, the color window door system according to the present invention more effectively blocks the ultraviolet ray and provides the aesthetic pleasure by filling the inside space of the paired glass with the colored liquid. That is, the color window and door system according to the present invention blocks the ultraviolet ray and provides
the aesthetic pleasure without the coating sheet adhered on the glass or without installing the blind or the curtain.

While the present invention has been described with respect to certain preferred embodiments, it will be apparent to those skilled in the art that various changes and modifications may be made without departing from the scope of the invention as defined in the following claims.
Claims

[1] A color window and door system comprising:
   a system frame having a shape of about rectangle;
   a glass frame disposed at an inner circumference of the system frame; and
   a paired glass fixed at an inner side of the glass frame and configured of a pair of glasses which are separated at a predetermined distance to form an inside space, wherein the inside space formed at the paired glass is filled with a liquid.

[2] The color window and door system of claim 1, wherein a liquid injection hole is formed at an upper portion of the paired glass to inject the liquid into the inside space.

[3] The color window and door system of claim 2, wherein the liquid has a predetermined color.

[4] The color window and door system of claim 3, wherein the liquid has a characteristic not frozen at -50°C.

[5] The color window and door system of claim 4, wherein the liquid is a brake oil.
A. CLASSIFICATION OF SUBJECT MATTER

E06B 3/66(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8 E06B 3/66

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patent and applications for inventions since 1975
Korean Utility Models and applications for Utility Models since 1975
Japanese Utility Models and applications for Utility Models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKIPASS (KIPO internal) & "Keywords window, glass, pair, liquid, injection , and similar terms"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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See patent family annex

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Name and mailing address of the ISA/KR
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