

Description

[0001] The invention relates to the field of construction, namely to the glass window and door equipped with the device protecting from the light.

[0002] There is known the method of tinting of the hermetic double-glass pane, which provides filling of the double-glass pane with a colored liquid by means of hydrocylinders, which are not of a small size and are located outside the frame and their operation requests some physical effort /1/.

[0003] The presented invention provides the method of rapid tinting of the double-glass pane placed in the door or window leaf and rapid recovery of its transparency without using any additional facilities from the existing external space. The presented device does not contain electronic instruments and accordingly does not require the electric power source.

[0004] The technical result of the invention is a simplification and increasing of the rate of the transparency changing of the double-glass pane placed in the door or window leaf without worsening of transparency quality.

[0005] The technical result is reached by reservoir which is constructed in the lower horizontal element of the double-glass pane frame inserted in the window or door leaf, and wherein is introduced the double-glass pane tinting substance. The capacity of the said reservoir is equal or more than the capacity of the space existing between the glasses. On purpose to put the window or door leaf in desire position the reservoir is turning over by 180 ° around the central horizontal axis in vertical plane towards the immovable external frame.

[0006] Tinting of the double-glass pane is carried out by any non-transparent substance. It is possible to use liquid or solid homogeneous powdery (sandy) mass consisting of sphere form crumbs.

[0007] The internal capacity of the double-glass pane is filled with non-transparent substance or emptied due to the earth gravity.

[0008] Non-transparent substance moves in the united space created by the reservoir arranged in the double-glass pane and its frame's one of the horizontal elements. The said space is formed as a vessel having two equal capacity containers hermetically isolated from the environment, and connected to each other.

[0009] The Invention is presented in two figures.

On the Figure 1 is shown the window or door leaf with transparent double-glass pane.

On the Figure 2 is shown the window or door leaf with non-transparent double-glass pane.

[0010] In the frame of window or door **1** there is inserted window or door leaf **2**, wherein is inserted the double-glass pane **3**, which consists of two glasses distanced from each other by 0,5÷3mm and connected by three sides uncontinuously. In one of the horizontal elements of the leaf **2** of the frame there is constructed the reservoir

4 which is connected to the space between the glasses by holes **5**, filled with tinting substance and except the holes connecting to the double-glass is duly protected on all sides from leaking of tinting substance which capacity is equal or more than capacity of the space between the double-glass pane. There are fixed horizontal axis **6** in the height of the vertical elements of the window or door leaf **2** frame on the midpoints by which this frame is connected to the window's or door's immovable frame **1** for turning over in vertical plane around of said axes by 180° towards the immovable frame on purpose to put the window or door leaf in desired position.

[0011] The double-glass pane is used by following:

Initially filled with tinting substance the reservoir **4** is placed in the lower part of the window leaf **2** (Fig.1). At this time the double-glass pane **3** is empty and transparent. After turning over by 180° through the vertical axis of the window leaf by force of gravity (unit weight) the tinting substance flows down (pours into) in the double-glass pane and fills it (Fig. 2). In this position the double-glass pane is filled with tinting substance and is non-transparent.

[0012] It is possible to fix the movable and immovable frames in the desired position towards each other by using any ordinary mechanical locking devices (are not shown on the figures).

[0013] The presented using of the double-glass pane is a preferable one compared with its other known analogues, because of simplicity of its use, needed no additional fittings and energy application, and in case of necessity the leaf by simple turning becomes tinted and transparent again. The tinting substance reservoir constructed in the horizontal element of the leaf is fully protected from three sides, but from the opened forth side is hermetically connected to the space between the glasses. The tinting substance is collected in the internal hollow space of the window or door leafs lower horizontal element, imperceptible from outer glance, by force of gravity when substance flows out from the double-glass pane connected to it and the double-glass pane becomes transparent by itself or vice-versa the tinting substance fills the double-glass pane and it becomes tinted.

[0014] The closest prior art document is WO2008/111924.

Claims

1. A window which contains a framed leaf with double-glass pane, a reservoir constructed in the element of the frame of the double-glass pane and filled with tinting substance, **characterized in that** the horizontal axis are fixed in the height of the vertical elements of the window leaf frame on the midpoints by which the frame is connected to the window's frame, the window leaf has a possibility to turn over in vertical

plane around of said axes by 180° towards the im-
movable frame on purpose for movement of tinting
substance due to its own gravity between the reser-
voir and double-glass pane, therein tinting sub-
stance reservoir is completely placed in one of the
horizontal elements of the window leaf's frame and
its capacity is hermetically connected to the internal
capacity of the double-glass pane.

2. A window, according to claim 1, **characterized in that** the reservoir and the internal capacity of the double-glass pane is hermetically isolated from environment.
3. A window, according to claim 1, **characterized in that** the capacity of the reservoir is equal or more than the capacity of the space between the glasses.

Amended claims in accordance with Rule 137(2) EPC.

1. A window which contains a framed leaf with double-glass pane, a reservoir constructed in the element of the frame of the double-glass pane and filled with tinting substance, **characterized in that** the horizontal axis are fixed in the height of the vertical elements of the window leaf frame on the midpoints by which the frame is connected to the window's frame, the window leaf has a possibility to turn over in vertical plane around of said axes by 180° towards the im-
movable frame on purpose for movement of tinting
substance due to its own gravity between the reser-
voir and double-glass pane, therein tinting sub-
stance reservoir is completely placed in one of the
horizontal elements of the window leaf's frame and
its capacity is hermetically connected to the internal
capacity of the double-glass pane.
2. A window, according to claim 1, **characterized in that** the reservoir and the internal capacity of the double-glass pane is hermetically isolated from environment.
3. A window, according to claim 1, **characterized in that** the capacity of the reservoir is equal or more than the capacity of the space between the glasses.

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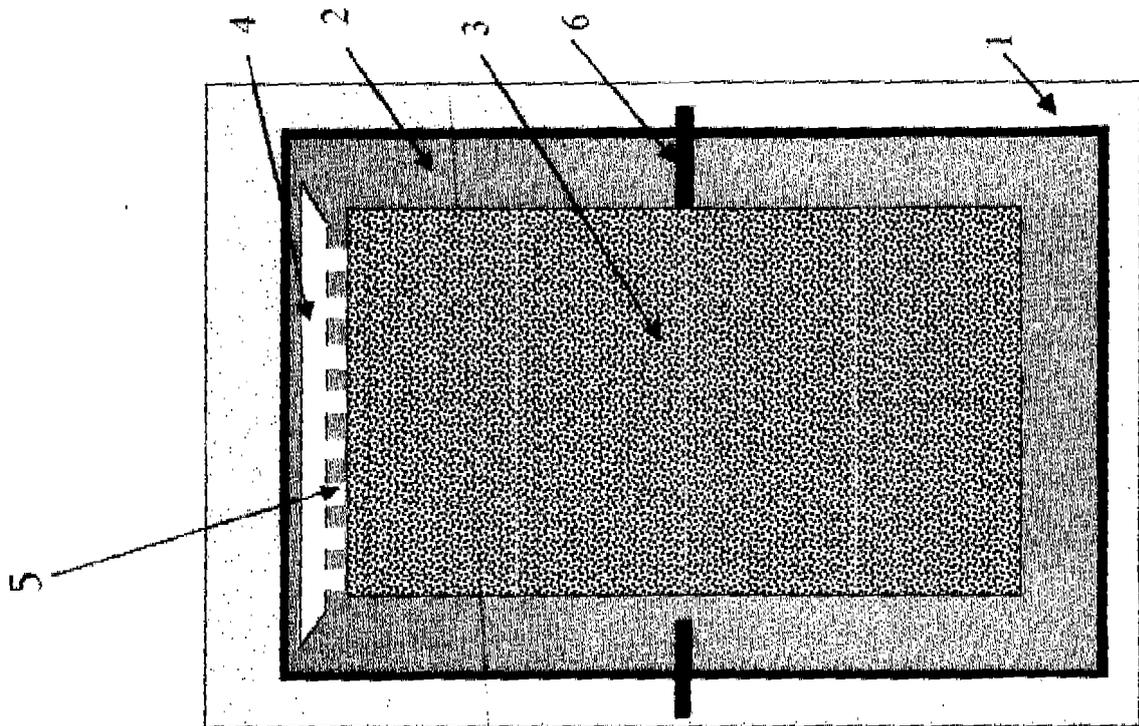


Fig. 2

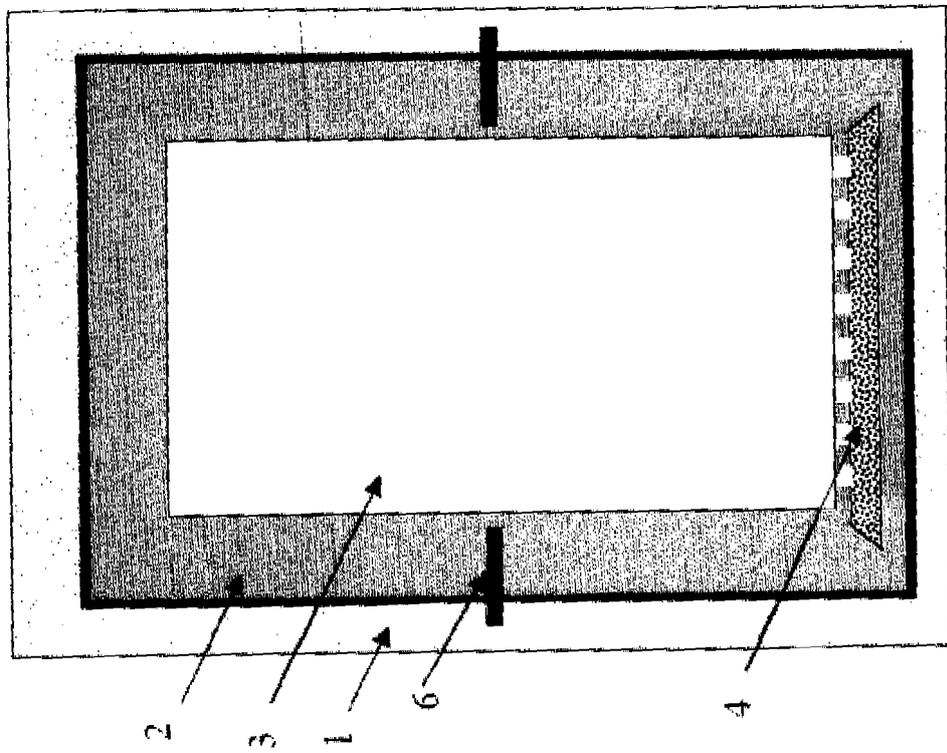


Fig. 1



EUROPEAN SEARCH REPORT

Application Number
EP 16 00 2659

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 3 091 006 A (HERLUF SAHLERTZ EBBE) 28 May 1963 (1963-05-28) * the whole document *	1-3	INV. E06B3/67
A,D	WO 2008/111924 A1 (NADTOCHIY OLEKSANDR VOLODYMYRO [UA]) 18 September 2008 (2008-09-18) * abstract *	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 March 2017	Examiner Blancquaert, Katleen
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 16 00 2659

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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22-03-2017

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 2008111924 A [0014]