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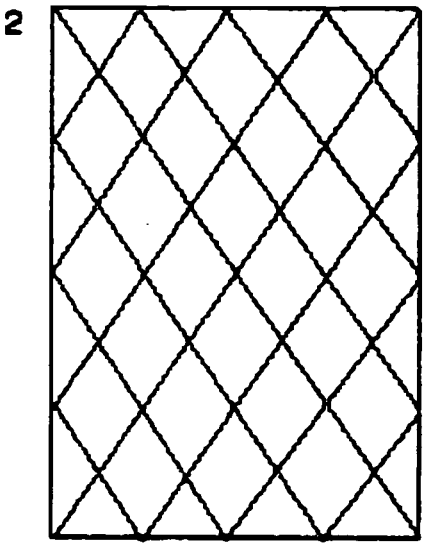
(54) Glass pane simulating leaded glass panel composed of individual elements

(57) A pane of glass divided into diamonds or rectangles by lead strips laid upon the surface of the pane in which the surfaces of some of the sections so divided are modified relative to others by the addition of a transparent substance to the surface of the pane so that an image reflected in the pane is broken up in simulation of an image reflected in a pane composed of smaller individual sections of glass joined by lead. The additional substance being either tapered, to displace that part of the image reflected in the section; or a fresnel type prism to produce a similar effect, or non reflective, to give the impression of displacement.



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Description

[0001] The purpose of the design is to give a more authentic appearance and greater charm to glazing where lead or some similar substitute is applied to a pane of glass, or any similar transparent pane in a way which imitates the pane being composed of a number of smaller sections of glass bounded, and/or joined by the leading. In particular but not exclusively where the lead to applied to divide the pane into regular diamonds or rectangles.

[0002] Where a single pane of glass is so divided, because the divided sections of glass lie in, or close to, the same plane; the reflection in the pane differs from that associated with authentic leaded glass composed of separate pieces of glass joined by lead, because in the first case the image is a continuous mirror image, whereas in the second case the image is fragmented because of the slight relative inclination of the individual pieces of glass. The purpose of the design is to mimic this fragmentation of the reflected image to improve the aesthetic appeal of the single pane divided by lead.

[0003] This is achieved by bonding to the surface of a number of the divided sections of the pane, (or moulding upon that surface) a thin transparent substance the same shape as the divided section but tapering in thickness so that the external reflective surface is inclined to the bonded surface. Because this addition, bonded to the surface of the pane, acts as a prism on light passing through the pane it would normally be desirable to bond a similar shape which tapers in the opposite direction, to the opposite surface of the pane to correct this usually unwanted optical property (the unbonded surface of this second addition would be parallel to the unbonded surface of the first addition, so that only the reflective properties of the additions would be significant. This complimentary addition would also be desirable because there is a reflection on transition of light from glass to air similar in magnitude to that of light impinging on glass from air (approximately 4% in both cases, giving an average total reflection for a normal glass pane of approximately 8% of light falling on it) so that it is desirable for the image reflected by both sides of the pane to be similarly displaced. Fresnel prisms of similar optical characteristics to the prisms described above may be used to replace some or all of those prisms.

[0004] An important but not exclusive application of this process could be he manufacture, in the double glazing industry, of leaded sealed units; where the necessity of maintaining an airtight seal between the two panes effectively precludes either of them being made of sections of glass Joined by lead.

[0005] The fragmentation of the reflected image may be augmented or achieved by the use of anti-reflective coating on some or all of the divided sections to be treated, or the use of "non-reflective" glass bonded in a similar way as the tapered sections already described. Where the design is used in the manufacture of leaded units the Internal pane would ideally, but not necessarily, use "non-reflective" glass.

Drawings (key)

[0006]

(1) sketch of shape of substance for addition to surface of pane for diamond leaded unit (2) (reflective surface inclined, in this case, downwards relative to surface of pane.
The inclination and placement of the shapes would be chosen to maximise aesthetic appeal,

(3) shape of substance for addition to "square" or box leaded pane (4), reflective surface inclined, in this case, towards the viewer in the vertical axis relative to the pane (thickness and degree of inclination exaggerated for clarity).

(5) example of shape for square leading (similalarly orientated to previous example for square leading (3)) with optical correction prism (identical to first shape but rotated through 180 degrees) shown in its relative position on the other side of the pane (pane not shown, but occupies apparent void between shapes).

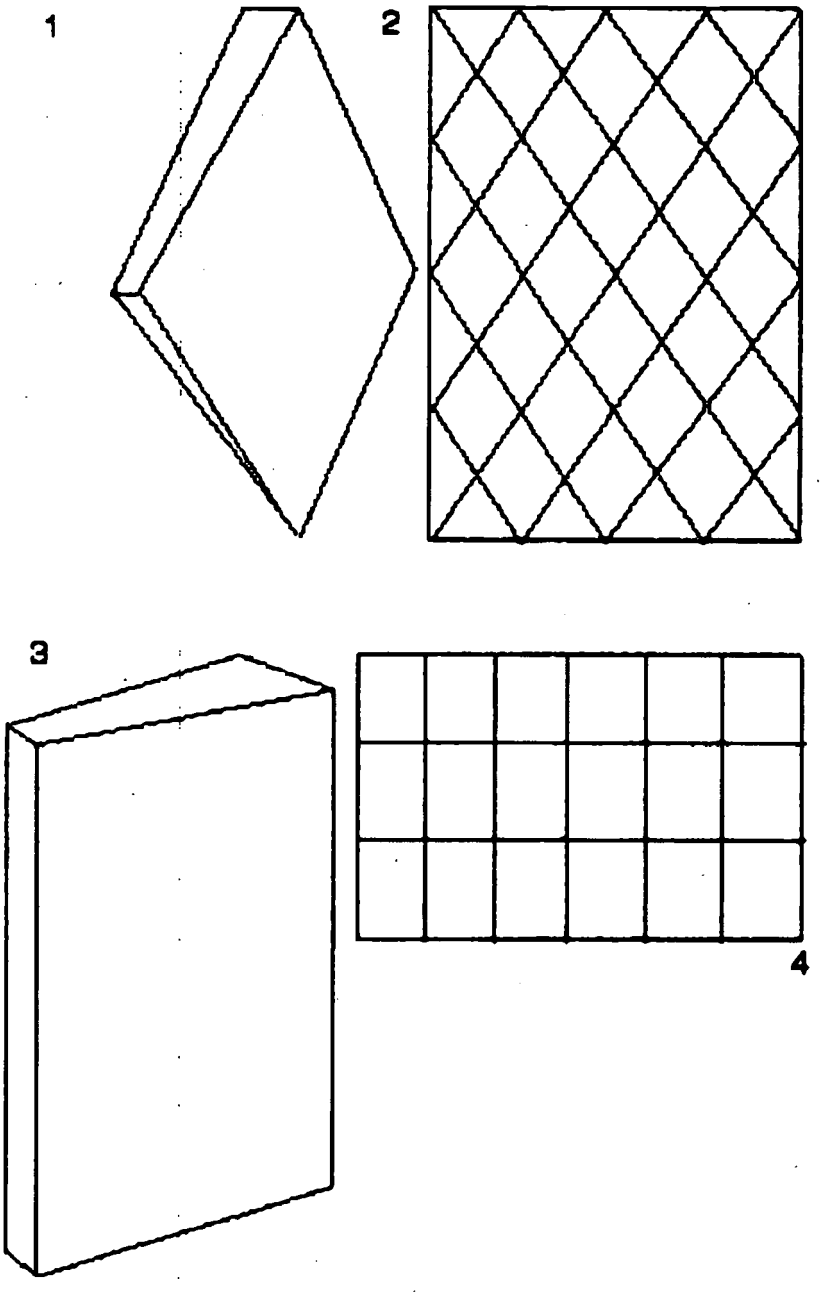
Claims

1. A pane of glass divided into diamonds or rectangles by lead strips (or some substitute for lead strips) in which the surfaces of some of the sections so divided are modified relative to others so that an image reflected by the pane is broken up to simulate the appearance of a pane composed of smaller individual sections of glass Joined by lead.

2. A pane of glass according to claim 1 in which thin wedges of transparent material may be bonded to, or moulded upon, the surface of the pane within some of the divided sections so that the reflective surface of these sections is slightly inclined relative to other sections; the displacement of the reflected image being enhanced, and the refractive distortion being corrected, if required, by the addition of a wedge of the same shape, but placed to taper in the opposite direction on the opposite surface of the pane.

3. A pane of glass according to claim 1 in which Fresnel prisms having similar optical characteristics to the prisms described in claim 2 are used to replace some or all of those prisms.

4. A pane of glass according to claim 1 in which transparent non-reflective material may be applied within some of the divided sections to break up the image reflected by the whole pane.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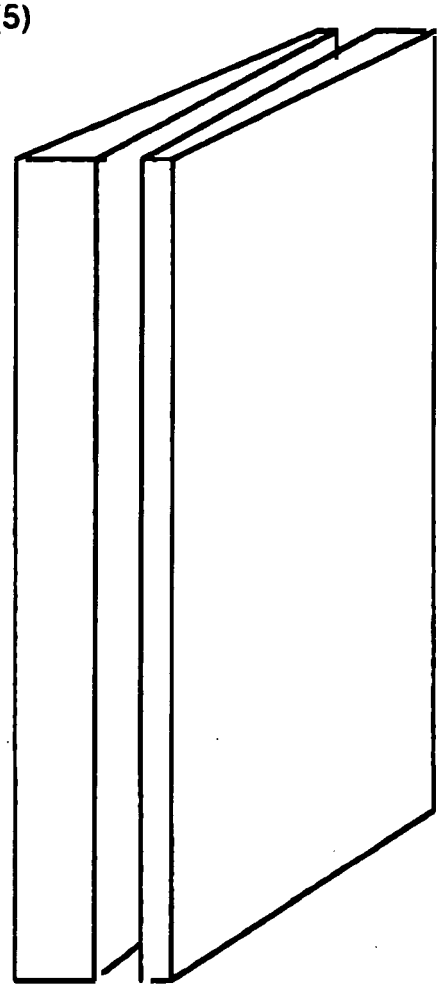

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EUROPEAN SEARCH REPORT

Application Number
EP 08 00 2981

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2 095 402 A (STARK JR GEORGE A) 12 October 1937 (1937-10-12) * column 1, line 16 - line 21 * * column 2, line 38 - column 3, line 23; figures 1,6 *	1 2,3	INV. B44F1/06
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Y	WO 96/34302 A (MINNESOTA MINING & MFG [US]) 31 October 1996 (1996-10-31) * page 2, line 16 - page 3, line 2 * * page 5, line 25 - page 6, line 13 * * page 12, line 19 - page 13, line 5 * * page 13, line 22 - line 27; figures 3-5,13a,13b *	3	TECHNICAL FIELDS SEARCHED (IPC) B44F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	24 September 2008	Sigurd, Karin

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
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L : document cited for other reasons

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82