Device (1,5) comprising at least one lifting rail (1) which is firmly adhesively bonded to a pane (5), wherein the at least one lifting rail (1) has a tuning fork-shaped vertical section, with a region (3.2) enclosing the edge of the transparent pane (5) on both sides, a
stem surface (3) and a region of branching (3.1), where the stem surface (3) transitions into the region (3.2), wherein a through-hole (2) or a cutout (7) is arranged on the outer edge (3.4), wherein the at least one lifting rail (1) has an adhesive strip (6) with two mutually opposite deformed regions (6.1), which partially covers the stem surface (3), with the through-hole (2) or the cutout (7) remaining free, and covers the region (3.2) enclosing the edge of the pane (5) on both sides and the mutually opposite open ends of the region (3.2) in such a way that the adhesive strip (6) is deformed by the edge of the inserted pane (5) in the two mutually opposite regions (6.1) of the adhesive strip (6), and the pane (5) is fixed in the enclosing region (3.2) on both sides by means of an adhesive (4); and method for producing same and use thereof.
Abstract

Device (1,5), comprising at least one lifting rail (1), which is firmly adhesively bonded to a pane (5), wherein the at least one lifting rail (1) has a tuning-fork-shaped vertical section, with a region (3.2) bilaterally enclosing the edge of the transparent pane (5), a stem surface (3), and a region of bifurcation (3.1), where the stem surface (3) transitions into the region (3.2), wherein a through-hole (2) or a cutout (7) is arranged on the outer edge (3.4),

characterized in that the at least one lifting rail (1) has an adhesive strip (6) with two mutually opposite deformed regions (6.1), which

– partially covers the stem surface (3), wherein the through-hole (2) or the cutout (7) remains exposed,
– covers the region (3.2) bilaterally enclosing the edge of the pane (5) and the mutually opposite open ends of the region (3.2) such that the adhesive strip (6) is deformed by the edge of the inserted pane (5) in the two mutually opposite regions (6.1) of the adhesive strip (6), and
– the pane (5) is bilaterally fixed in the enclosing region (3.2) by means of an adhesive (4),

Method for production thereof and use thereof.
Device Comprising a Pane and at Least One Lifting Rail, Method for Its Production and Its Use

Description

The present invention relates to a device comprising a pane and at least one lifting rail.

The present invention also relates to a method for producing the device.

Furthermore, the present invention relates to the use of the device.

Devices comprising transparent panes and lifting rails as well as methods for their production are known. The lifting rails are flat molded parts that are — viewed in vertical section — fork-shaped. The fork-shaped part with its — viewed in the vertical section — tines thus forms a region that can bilaterally enclose the edges of transparent panes. The edges of the transparent panes are inserted into the interior of this region and firmly adhesively bonded on the bottom of the region as well as, optionally, areally on both sides.

During this operation, it can happen that the uncured adhesive pressed out by the edge of the transparent pane from the two lower, still open regions of the enclosing region of the lifting rail, is caught, and is also cured.

Depending on the use of the device, it may be that no space is provided for the pressed-out mass of adhesive in the functional structure involved, such that it can, undesirably, make contact with other parts of the the structure. This can be the case in particular if the functional structure is used as a movable side window in automobile doors. However, it can also detach during the service life of the structure and cause undesirable noise. Moreover, it can, in particular, block openings through which water penetrating into the structure can drain. If the drains are plugged, this can, over time, result in corrosion damage.

A further disadvantage of the formation of pressed-out adhesive masses is the higher consumption of adhesive.

In order to remedy the above described disadvantages after the fact, the pressed-out mass of adhesive can be removed mechanically before, during, or after the curing of the adhesive. This can be happen using suitable devices or manually. Meanwhile, the further disadvantage
of an additional process step is encountered. Moreover, the adhesive residues removed are unusable waste that must be discarded.

Known from European patent application EP 1 936 088 A1 is a frameless window that comprises a transparent pane, the lower edge of which is fixed in a slot of one or a plurality of holders with at least one layer of an adhesive, wherein the lower edge of the pane is joined to the walls of the slot of the holders by means of one or a plurality of layers of a first adhesive that is applied near the lateral end of the slot, wherein at least one layer of a second adhesive is applied in the slot between the layers of the first adhesive. The method is thus complicated and does not offer a full guarantee against the outflow of adhesives.

Known from European patent application EP 1 936 087 A1 is a frameless window that comprises a transparent pane, the lower edge of which is fixed in a slot of one or a plurality of holders with at least one layer of an adhesive, wherein the adhesive has a modulus of elasticity between 10 and 90 MPa at room temperature, and that the width of the slot of at least one holder is at least twice the thickness of the pane. It is, however, necessary to introduce one or a plurality of closing members to the mounting for the lower edge of the pane in the slit of a holder to prevent prevent leakage of the adhesive.

In contrast, the object of the present invention is to provide a method for producing a device comprising a transparent pane and at least one lifting rail firmly adhesively bonded thereto, that delivers, in a simple manner, devices that are free of pressed-out adhesive.

These and other objects are accomplished according to the proposal of the invention by the device and the method with the features of the independent claims. Advantageous embodiments of the invention result from the features of the subclaims.

The lifting rail serves to connect a pane to a drive device, for example, a traction device or a lifting device, with which the transparent pane is moved horizontally or vertically.

As is known, the lifting rail is a substantially flat component that is preferably constructed from a technical plastic, in particular a thermoplastic, such as polyethylene, polypropylene, polystyrene, polyoxymethylene, polycarbonate, polymethylmethacrylate, polyamide, polyester, in particular polybutylene terephthalate (PBT), polyvinyl chloride, polysulfone, polyethersulfone, polyether ketone, and/or mixtures thereof.
The lifting rail has a substantially or exactly square or rectangular outline, wherein the region that does not accommodate the transparent pane can also have, for example, a concavely or convexly rounded or trapezoidal outline.

The dimensions of the lifting rail can vary widely and are governed by the respective applitational purpose. Preferably, the lifting rail has a height of 3 to 15 cm, a length of 3 to 20 cm, and a thickness of 1 to 5 cm, wherein, in one embodiment, the total thickness in the region that spans the edge of the transparent pane is greater than in the connection region, which connects the lifting rail to a drive device, and, in another embodiment, is the same size.

The vertical section through the lifting rail, in other words, from the outer edge of the connection region to the outer edge of the region that spans the edge of the transparent pane, is fork-shaped, for example, tuning-fork-shaped. This means that the lifting rail has a stem surface, a region of bifurcation where the stem surface transitions into the fork-shaped region, which bilaterally encloses the edge of the transparent pane. However, it is also possible to use a fork shape in which the stem surface transitions smoothly into the fork-shaped region such that the stem surface and the outer surface of the region that bilaterally encloses the edge of the transparent pane form a flat surface.

It is advantageous for the contour in the interior of this region in the region of bifurcation to be adapted to the contour of the edge of the pane.

The stem surface of the lifting rail has at least one, in particular one, through-hole, which is preferably arranged centrally. The through-hole can have various outlines. It can be circular, rectangular, square, triangular, or hexagonal. Preferably, it is circular.

The through-hole is traversed by a bolt that is connected to the drive device, preferably a lifting device or traction device.

In another embodiment, the stem surface of the lifting rail has a cutout on its outer edge, in which the connection to a drive device, for example, a lifting device, engages.

According to the invention, the lifting rail has a single-sided or double-sided, preferably single-sided bonding adhesive strip, which partially covers the stem surface, with the through hole or the cutout remaining exposed. If a double-sided adhesive strip is used, the protective
covering on the outside is not removed after application of the adhesive strip on the lifting rail.

The adhesive strip can, in the tuning-fork-shaped configuration, at least partially, preferably completely, cover the region of the bifurcation.

According to the invention, the adhesive strip covers the region bilaterally enclosing the edge of the transparent pane and the mutually opposite open ends of the region. In this configuration, the adhesive strip is deformed by the edge of the pane during the joining of the pane and the lifting rail on the two opposite ends of the enclosing region, in particular in the direction of the stem surface.

In one embodiment of the device according to the invention, the adhesive strip completely encircles the stem surface, the bifurcation region, and the enclosing region.

In another embodiment, the adhesive strip covers the enclosing region such that the regions adjacent the upper edge of the lifting rail remain uncovered.

In another embodiment of the device according to the invention, the adhesive strip is transparent or opaque or transparent in at least one subregion transparent and opaque in at least one other subregion.

Conventional, known adhesive strips, for example, Tesa® Transparent Tape 57405 (glossy) or Scotch Magic Tape® 810 (matte) are used as the adhesive strip to be used according to the invention. A suitable criterion for selecting particularly well-suited adhesive strips is the existence of the conventional, known cataplasma test test (7 days at 70°, 100% relative humidity), wherein there must be no disbonding of the adhesive strip from the lifting rail. The adhesive strip must also not tear and/or slide downward in the direction of the stem surface.

Prior to the joining of the pane and the lifting rail, an adhesive is introduced into the interior of the enclosing region. A wide variety of adhesives can be used. Preferably, a polymerization adhesive, a polycondensation adhesive, or a polyaddition adhesive it is used. Preferably, a polyaddition adhesive, in particular a polyurethane adhesive, is used.

During insertion of the pane, the adhesive distributes itself on the bonding surface, with the undesirable outflow of adhesive effectively prevented by the adhesive strip to be used according to the invention.
Then, the adhesive is cured and a stable adhesive bond between the pane and the lifting rail develops.

The pane of the device according to the invention can be made of glass, plastic, wood, metal, or combinations of at least two of these materials.

Preferably, the pane is a transparent pane that is constructed in particular from glass and/or plastic.

In a preferred embodiment of the device according to the invention, the transparent pane is a safety glazing that has at least two transparent panes.

Suitable as the first and, optionally, the second pane are, in principle, all substrates that are thermally and chemically stable as well as dimensionally stable under the conditions of production and use of the transparent pane.

The first pane and/or the second pane preferably contain glass, particularly preferably flat glass, float glass, quartz glass, borosilicate glass, or soda lime glass, or clear plastics, preferably rigid clear plastics, in particular polyethylene, polypropylene, polycarbonate, polymethylmethacrylate, polystyrene, polyamide, polyester, polyvinyl chloride, and/or mixtures thereof. The first pane and/or the second pane are preferably transparent, in particular for the use of the pane as a movable side window of a vehicle or other uses in which high light transmittance is desired. In the context of the invention, “transparent” means a pane that has transmittance in the visible spectral range of >70%. For panes that are not positioned in the traffic-relevant field of vision of the driver, for example, for roof panels, the transmittance can, however, be much lower, for example, >5%.

The thickness of the transparent pane can vary widely and thus be ideally adapted to the requirements of the individual case. Preferably, panes with the standard thicknesses from 1.0 mm to 25 mm, preferably from 1.4 mm to 5 mm are used for vehicle glazing, and preferably from 4 mm to 25 mm for furniture, appliances, and buildings, in particular for electric heaters. The size of the pane can vary widely and is governed by the size of the device according to the invention. The first pane and, optionally, the second pane have, for example, in the automotive industry and the architectural sector usual areas from 200 cm² up to 20 m².
The transparent pane can have any three-dimensional shape. Preferably, the three-dimensional shape has no shadow zones such that it can be coated, for example, by cathodic sputtering. Preferably, the substrates are planar or slightly or greatly bent in one or a plurality of spatial directions. In particular, planar substrates are used. The transparent panes can be colorless or colored.

Multiple panes are bonded to one another by at least one intermediate layer. The intermediate layer preferably contains at least one thermostatic plastic, preferably polyvinyl butyral (PVB), ethylene vinyl acetate (EVA), and/or polyethylene terephthalate (PET). However, the thermoplastic intermediate layer can also contain, for example, polyurethane (PU), polypropylene (PP), polyacrylate, polyethylene (PE), polycarbonate (PC), polymethylmethacrylate, polyvinyl chloride, polyacrylate resin, casting resins, polyacrylates, fluorinated ethylene propylene copolymers, polyvinyl fluoride, and/or ethylene tetrafluoroethylene copolymers, copolymers or mixtures thereof. The thermoplastic intermediate layer can be formed by one or even by a plurality of thermoplastic films arranged one atop another, with the thickness of the thermoplastic films preferably being from 0.25 mm to 1 mm and typically 0.38 mm or 0.76 mm.

The device according to the invention can be produced using various methods. It is, however, preferably produced using the method according to the invention.

The method according to the invention is characterized by the following process steps:

1. Providing at least one lifting rail, having
   - a fork-shaped vertical section and
   - a stem surface with a through-hole or a cutout on the outer edge

2. Introducing an adhesive into the interior of the region in the region of bifurcation in an amount that reaches, after insertion of the pane, at most up to the upper edge of the enclosing region on both sides.

3. Adhesively mounting an adhesive strip on the at least one lifting rail such that it
   - partially covers the stem surface, with the through-hole remaining exposed, and
- covers the region bilaterally enclosing the edge of the pane and the mutually opposite open ends of the enclosing region such that the adhesive strip is deformed by the edge of the insertion pane upon insertion in these regions,

5 (4) Inserting the edge of the pane into the interior of the bilaterally enclosing region, wherein the two mutually opposite regions of the adhesive strip are deformed, and

(5) Curing the adhesive.

10 Using the method according to the invention, the formation of pressed-out plastic masses can be prevented in a simple manner.

The method according to the invention can, however, also be used for producing devices of the prior art, in that the adhesive strip is peeled off. However, this requires an additional process step and there is the risk that parts of cured or uncured adhesive will be torn off.

15 The device according to the invention, in particular the device according to the invention produced using the method according to the invention can ideally be used as a functional and/or decorative individual piece and/or as a built-in part in furniture, appliances, and buildings, as well as in means of transportation for transportation on land, in the air, or on water, but, in particular in motor vehicles, for example, as a movable rear window and a side window and/or a movable glass roof. Preferably, the device according to the invention is implemented as a vehicle side window or a glass roof.

20 Of course, the aforementioned features and those described in detail in the following can be used not only in the combinations and configurations indicated, but also in other combinations and configurations or alone without departing from the scope of the present invention.

Brief Description of the Figures

The invention is now explained in detail using exemplary embodiments, with reference to the accompanying figures. They depict, in simplified, not-to-scale representation:

Fig. 1 a side view of a lifting rail 1 with an associated pane 5 before joining to form a device according to the prior art;

35 Fig. 1a a vertical section through the arrangement of Fig. 1;
Fig. 2 a side view of the joined device 1,5 according to the prior art with pressed-out adhesive;

Fig. 2a a vertical section through the joined device 1,5 according to the prior art;

Fig. 3 a side view of a lifting rail 1 with an associated pane 5 prior to joining to form a device 1,5 according to the invention;

Fig. 3a plan view of the vertical edge of the lifting rail 1 and of the vertical edge of the associated pane 5;

Fig. 4 a side view of the joined device 1,5 according to the invention;

Fig. 4a plan view of the vertical edge of the lifting rail 1 and of the vertical edge of the associated pane 5 of the device 1,5 according to the invention;

Fig. 5 a side view of the lifting rail 1 with a cutout 7;

Fig. 5a a vertical section through the lifting rail 1 along the section line A-B;

Fig. 6 a side view of the lifting rail 1;

Fig. 6a a vertical section through the lifting rail 1.

In Fig. 1 through 4a the reference characters have the following meaning:

1 lifting rail with a fork-shaped vertical section
2 through-hole of the lifting rail 1 through the stem surface 3
3 stem surface of the lifting rail 1
20 3.1 region of bifurcation
3.2 region enclosing the edge of the pane 5
3.3 upper edge
3.4 outer edge
4 adhesive
25 4.1 pressed-out mass of adhesive
5 pane
6 adhesive strips surrounding the region of bifurcation 3.1
6.1 region of the adhesive strip 6 deformed by the pane 5
7 cutout on the outer edge 3.4
30 R direction of insertion
R1 direction of deformation
A-B section line

Detailed Description of the Figures

Fig. 1 and 1a
Fig. 1 depicts the side view of a detail of a transparent pane 5 and a lifting rail 1 prior to joining in the direction R to form the device 1,5 of the prior art.

Here, and in the following, the transparent pane 5 is a laminated safety glass pane (VSG).

Here, and in the following, the lifting rail 1 is a component made of polypropylene having the length of 8 cm, the height of 6 cm, the thickness of 1 cm in the stem region 3, and the total thickness of 1.5 cm in the region 3.2 (cf. Fig. 1a) surrounding the edge of the transparent pane. The lifting rail 1 further has a region of bifurcation 3.1, where the region 3 transitions into the region 3.2.

Centrally arranged in the stem region 3 is a circular through-hole with a diameter of 1.5 cm, which serves to accommodate a bolt for connection to a drive device, for example, a lifting device.

Fig. 1a depicts the vertical section through the lifting rail 1 and thus illustrates its tuning-fork-shaped configuration.

A polyurethane adhesive is filled into the interior of the region 3.2. Thus, the lifting rail 1 and the transparent pane 5 are ready for joining.

**Fig. 2 and 2a**

Fig. 2 depicts a side view of a joined device 1,5 of the prior art comprising a transparent pane 5 and a lifting rail 1.

Fig. 2a depicts the vertical section through the device 1,5 of the prior art.

By means of the insertion of the transparent pane 5 into the interior of the enclosing region 3.2, the uncured adhesive 4 is displaced and distributed on the bonding surface. However, in this process, the uncured adhesive 4 is also squeezed out laterally from the region 3.2 and thus forms the undesirable pressed-out adhesive masses 4.1.

**Fig. 3 and 3a**

Fig. 3 depicts a side view of the transparent pane 5 and of the lifting rail 1 prior to joining in the direction R, R1 to form the device 1,5 according to the invention.
Fig. 3a depicts the plan view of the lateral vertical end edge of the lifting rail 1 to be used according to the invention.

The lifting rail 1 to be used according to the invention has a circumferentially adhesively mounted adhesive strip 6 (Tesa® Transparent Tape 57405 (glossy)). Here, the stem region 3 is covered such that the through-hole 2 remains exposed. The region of bifurcation 3.1 is completely taped over, whereas, in contrast, the enclosing region 3.2 is covered only to just below the upper edge 3.3.

Fig. 3a depicts the manner in which the adhesive strip 6 bridges the opening in the lateral vertical end edge.

The adhesive 4 (not visible) is situated in the interior of the enclosing region 3.2.

Thus, the transparent pane and the lifting rail 1 with the adhesive strip 6 are ready for joining.

Fig. 4 and 4a

Fig. 4 depicts the side view of the joined device 1.5 according to the invention with the two regions 6.1 of the adhesive strip 6 deformed by the edge of the transparent pane 5. This configuration is illustrated again by Fig. 4a, which offers a view of the lateral vertical end edges of the device 1, 5 according to the invention.

Fig. 5 and 5a

Fig. 5 depicts a side view of a lifting rail 1, as it can be used in the method according to the invention for producing the device 1,5 according to the invention.

Fig. 5 a depicts the vertical section through the lifting rail 1 of Fig. 5 along the section line A-B.

The lifting rail 1 of Fig. 5 corresponded in its features to the lifting rail 1 of Fig. 1, with the substantial difference that instead of the through-hole 2 in the stem surface 3, the outer edge 3.4 had the cutout 7. The connection to a drive device, for example, a lifting device, was able to engage in this cutout 7.
Fig. 6 and 6a

Fig. 6 depicts a side view of a lifting rail 1, as it can be used in the method according to the invention for producing the device 1,5 according to the invention.

Fig. 6 a depicts the vertical section through the lifting rail 1 of Fig. 6.

The lifting rail 1 of the Fig. 6 corresponded in its features to the lifting rail 1 of Fig. 1, with the substantial difference that its stem surface 3 and the enclosing region 3,2 formed a planar surface. This is illustrated again by Fig. 6a, which shows that the vertical section does not have a tuning-fork-shaped configuration.
Claims

1. Device (1.5), comprising at least one lifting rail (1), which is firmly adhesively bonded to a pane (5), wherein the at least one lifting rail (1) has a tuning-fork-shaped vertical section, with a region (3.2) bilaterally enclosing the edge of the transparent pane (5), a stem surface (3), and a region of bifurcation (3.1), where the stem surface (3) transitions into the region (3.2), wherein a through-hole (2) or a cutout (7) is arranged on the outer edge (3.4), characterized in that the at least one lifting rail (1) has an adhesive strip (6) with two mutually opposite deformed regions (6.1), wherein the adhesive strip (6)

   - partially covers the stem surface (3), wherein the through-hole (2) or the cutout (7) remains exposed,
   - covers the region (3.2) bilaterally enclosing the edge of the pane (5) and the mutually opposite open ends of the region (3.2) such that the adhesive strip (6) is deformed by the edge of the inserted pane (5) in the two mutually opposite regions (6.1) of the adhesive strip (6), and
   - the pane (5) is bilaterally fixed in the enclosing region (3.2) by means of an adhesive (4).

2. Device (1.5) according to claim 1, characterized in that the adhesive strip (6) completely encircles the stem surface (3) and the regions (3.1) and (3.2).

3. Device (1.5) according to claim 1 or 2, characterized in that the adhesive strip (6) covers the region (3.2) such that the regions adjacent the upper edges of the at least one lifting rail (1) remain uncovered.

4. Device (1.5) according to one of claims 1 through 3, characterized in that the adhesive strip (6) is transparent or opaque or is transparent in at least one subregion and is opaque in at least one other subregion.

5. Device (1.5) according to one of claims 1 through 4, characterized in that the adhesive (4) covers the pane (5) on both sides up to the upper edge of the at least one lifting rail (1).
6. Device (1,5) according to one of claims 1 through 5, characterized in that the adhesive (4) is a polymerization adhesive, a polycondensation adhesive, or a polyaddition adhesive.

7. Device (1,5) according to one of claims 1 through 6, characterized in that the bottom in the interior of the region (3.2) in the region of bifurcation (3.1) is adapted to the contour of the edge of the pane (5).

8. Device (1,5) according to one of claims 1 through 7, characterized in that the device (1,5) is connected to a drive device via the at least one lifting rail (1).

9. Device (1,5) according to one of claims 1 through 8, characterized in that the drive device is connected to the at least one lifting rail (1) by means of a bolt passing through the through-hole (2) or a device engaging in the cutout (7).

10. Device (1,5) according to one of claims 1 through 9, characterized in that the drive device is a lifting device or a traction device.

11. Method for producing a device (1,5) according to one of claims 1 through 10, characterized by the following process steps:

   (1) Providing at least one lifting rail (1), having
   – a fork-shaped vertical section,
   – a stem surface (3) with a through-hole (2) or a cutout (7) on the outer edge (3.4),
   – a region of bifurcation (3.1), where the stem surface (3) transitions into the region (3.2), and
   – a region (3.2), which, in the finished device (1,5), bilaterally encloses the edge of a pane,

   (2) Introducing an adhesive (4) into the interior of the region (3.2) in the region of bifurcation (3.1) in an amount that reaches, after insertion of the pane (5), on both sides at most up to the upper edge of the region (3.2),

   (3) Adhesively mounting an adhesive strip (6) on the at least one lifting rail (1) such that it
   – partially covers the stem surface (3), wherein the through-hole (2) or the cutout (7) remains exposed, and
— covers the region (3.2) bilaterally enclosing the edge of the pane (5) and the mutually opposite open ends of the region (3.2) such that the adhesive strip (6) is deformed by the edge of the insertion pane (5) upon insertion the two mutually opposite regions (6.1) of the adhesive strip (6) in the direction (R1),

(4) Inserting the edge of the pane (5) into the interior of the bilaterally enclosing region (3.2), wherein the two mutually opposite regions (6.1) of the adhesive strip (6) are deformed in the direction (R1), and

(5) Curing the adhesive (4).

12. Method for avoiding pressed-out adhesive masses (4.1) during production of devices (1.5) comprising at least one lifting rail (1) and one pane (5) according to the method 11, characterized by the following process steps:

(1) Providing at least one lifting rail (1), having
   — a fork-shaped vertical section,
   — a stem surface (3) with a through-hole (2) or a cutout (7) on the outer edge (3.4),
   — a region of bifurcation (3.1), where the stem surface (3) transitions into the region (3.2), and
   — a region (3.2), which bilaterally encloses, in the finished device (1.5), the edge of a pane,

(2) Introducing an adhesive 4 into the interior of the region (3.2) in the region of bifurcation (3.1) in an amount, that reaches, after insertion of the transparent pane (5), at most up to the upper edge of the region (3.2),

(3) Adhesively mounting an adhesive strip (6) on the at least one lifting rail (1) such that it
   — partially covers the stem surface (3), wherein the through-hole (2) or the cutout (7) remains exposed, and
   — covers the region (3.2) bilaterally enclosing the edge of the transparent pane (5) and the mutually opposite open ends of the region (3.2) such that the adhesive strip (6) is deformed by the edge of the insertion pane (5) upon insertion the two mutually opposite regions (6.1) of the adhesive strip (6) in the direction (R1),
(4) Inserting the edge of the pane (5) into the interior of the bilaterally enclosing region (3.2) wherein the two mutually opposite regions (6.1) of the adhesive strip (6) are deformed in the direction (R1),
(5) Peeling off the adhesive strip (6) along with excess adhesive that flowed out laterally from the bilaterally enclosing region (3.2), and
(6) Curing the remaining adhesive (4).

13. Use of the device (1,5) according to one of claims 1 through 10 or the device (1, 5) produced according to claim (11) or according to claim (12) as a movable functional and/or decorative individual piece and as a built-in component in furniture, appliances, buildings, and means of transportation.

14. Use according to claim 13, characterized in that the means of transportation are aircraft, watercraft, trains, and motor vehicles.

15. Use according to claim 14, characterized in that the devices (1,5) are used as movable transparent side window panes and glass roofs of motor vehicles.