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Title: Fitting



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Description

The invention relates to a fitting according to the preamble of patent claim 1. Such fittings preferably serve
5 for fastening a glass element and/or for disposing it in a lockable position, at least to one adjoining glass element, the glass elements being in a rigid or movable position to each other.

Such fittings, both with and without integral lock or
10 mounted handle device, are known from the catalogue "DORMA Glasbeschlagstechnik, Edition 09/98" (DORMA Glass Fitting Technique). Each fitting is composed of fitting-halves. Each fitting-half has a modular construction and essentially consists of a sub-structure, which is
15 formed by a base section and by a functional insert, into which, for example, the proper lock and/or a lever handle mechanism is integrated, and of a capping cover. Various possibilities are offered for connecting toughened glass elements, both on the inside area and the outside area.

20 The opening angle of glass elements, which are movably positioned to each other, is among other things limited by the shape of the fittings, of the covers thereof and of the handle devices. Accordingly, the edgy shape of prior art covers presents a drawback as the edges will
25 prematurely border on each other and reduce the opening angle. Due to the shape of the edges, the covers

require complex manufacturing and, from the point of view of economical material use, they are not optimized. Furthermore, particularly during cleaning operations, the cover may cause injuries to personnel.

- 5 Fastening the cover by means of clip-on devices or by means of a snap-in device is not advantageous. Already during the very first mounting the snap-on devices may be damaged or may even break. Especially, after disassembling and reassembling it several times, the
10 cover's tight seating is not any longer guaranteed. If the component is exposed to too much strain, in this case especially with movable door panels, shocks and vibrations may damage the snap-in device.

- The object of the invention is to provide a fitting according
15 to the preamble of claim 1, which forms a compact and visually appealing unit and presents the smallest possible construction height and dimensions, while maintaining the previously known variety of applications and different functions. Especially, it should be possible to safely
20 secure the cover of the fitting to the underlying sub-structure.

- This object is solved with the characteristics specified in patent claim 1. Advantageous embodiments of the subject matter of patent claim 1 are specified in the
25 dependent claims.

The inventive fittings according to patent claims 1 and 2 present the advantage of allowing realization of a small construction height and a compact unit due to the convex exterior shape of the elongated cover extending in a direction of an arrow. The edgy exterior shape is eliminated. Therefore the sub-structure underneath the cover is rounded, at least at the corners, such as to create a plane seating support for the cover. The curvature allows for an optimum exploitation of the construction space and an optimization of manufacturing expenses and of the material used.

Although the amount of material required for the inventive cover is extremely low, the stability and functionality characteristics are guaranteed. Especially, the at least partial plane seating support of the cover at the sub-structure dampens the vibrations caused during utilization and therefore avoids unintentional removal of the cover.

The resulting exterior contours are conceived in a visually appealing way with smooth and seamless transitions. All edges and borders are provided with radii. The result is a universal, model-independent, yet well-balanced exterior line of design. All material widths are reduced to a minimum. The streamlined shape of the exterior contours, particularly the frontal surface, considerably reduces the amount of material required and minimizes, for example, manufacturing problems linked to casting techniques. Both metal and plastic materials, even so-

called hybrid materials are conceivable for use. Colour composition is almost unlimited. Furthermore, the enumerated characteristics considerably contribute to reduce the cost of manufacturing.

- 5 The concealed disposition of the sub-structure eliminates accidental manipulations and function-hindering contamination, and creates an advantageous visual appearance with respect to the glass elements' transparency. Moreover, there are no protruding
10 components, which make cleaning of the glass surfaces easy.

The fitting is suitable for use with both a rigidly fastened glass element, for example at a stationary glass element, and a pivotably fastened glass element at adjoining glass
15 elements. The cooperating fittings are executed as complementary parts, such as to visually build one whole.

In the event of a top-side and bottom-side bearing of a movable glass element, the fitting fastened at the stationary glass element, due to stability reasons, is
20 preferably executed in an angular shape, which simultaneously allows for rigidly interconnecting an overpanel and a lateral panel with each other. The fitting fastened at the movable glass element is of rectangular-shape, such as to achieve a rectangular unit, when seen
25 as a whole. On account of the advantageous shape of the cover, the glass elements pivotably connected to

each other can be opened with an opening angle up to almost 180°

Moreover, a lock may be integral with the fitting. The lock fitting is used for doors, which are supported at a stationary lateral glass panel or at an overpanel, and depending on the execution type, may be mounted on the top-side or on the bottom-side as a so-called corner lock fitting or as a conventional centrally located lock fitting. The exterior shape of the fitting, i.e. the curvature of the frontal surface, is mirrored in the strike box fitting thereof. The functional insert includes at least the lock, which is operable by means of a key, and if necessary the equipment for mounting a door lever handle. In the event a non-glass frame is used, an adjustment to the frame construction is required with respect to the perfect functioning between the movable components (latch, bolt) in the inventive lock fitting and the associated openings in the strike plate on the frame-side. The cooperating fittings are conceived as complementary parts, such as to visually build one whole.

In a preferred embodiment, a handle device forms integral part, and, from an aesthetical and visual point of view, the lock fitting and the handle device form a smooth and harmonized exterior line of design.

The handle device presents the advantage of the handle member having a curved shape execution, when seen in

the direction of a pivotably supported component, for example a door, which circumstance provides for a reduction of spatial dimension. A protruding free end of the handle member is eliminated. The curvature allows
5 for optimum exploitation of the construction space and for optimization of the manufacturing expense and of the amount of material used.

The construction conveys a distinct feeling of grip to the user. The inwards arched or curved shape of the handle
10 member creates a haptically advantageous touch surface, which conveys a distinct feeling of grip to the user and which, particularly in the event of incompletely embracing the handle member, eliminates slipping of the hand. Furthermore, the risk of clothes or the like
15 engaging with the handle member is minimized, as the distance between the free end and the pivoting panel is extremely small.

The handle device is composed of a handle member, one end thereof is joined by an integral connecting
20 component serving as a non-positive connection, for example, with a door. The handle member and the connecting component present a round cross-section. The diameter of the connecting component preferably increases in the direction of the pivoting component. On
25 the one hand, this minimizes the amount of material and, on the other hand, guarantees a sturdy reception of a lever pin, which mechanically connects the handle device

with a locking mechanism and with an opposite handle device

The free end of the handle member is limited by an oblique, preferably planar fore-part, the region thereof
5 proximate to the pivoting panel being positioned further away from the connecting component than the region distal to the panel. The transition areas between the fore-part and the handle member present radii or chamfers.

The handle device is preferably manufactured in a
10 casting process as one piece and subsequently finished. The smooth transition of the exterior contours reduces manufacturing problems, for example linked with casting techniques.

The handle device, respectively the individual parts
15 thereof, may be manufactured from various metals, such as brass, iron, stainless steel, aluminium or bronze, or from other non-metal materials, such as plastic material.

The inventive handle device can be found in applications with door handles, window handles or the like, which
20 serve as a simple handle device or trigger functions associated with locking. Applications associated with locking, for example with door handles or window handles, are primarily realized by means of a handle device actuated by rotation, the handle device being
25 coupled with the locking mechanism of the door or of the window.

An inventive fitting according to patent claim 12 presents the advantage that the fastening means of the cover do not present, for example, any snap-in devices or clip-on devices, weakening due to material fatigue or being
5 subject to wear. Also, the realization of a partially resilient fastening allows for compensation of shocks or vibrations generated during operation, likewise, a higher tolerance compensation of the components employed is offered without any problem.

10 To accommodate the fitting's sub-structure, the cover presents in the interior reception chamber thereof passages on one side, which, being at least friction-fit, cooperate with blocking bodies that are pre-mounted in the sub-structure and engage with each other in a
15 complementary manner. Interior grooves will engage with pins that are resiliently positioned in the sub-structure to realize the cover's final fastening. The blocking bodies may be formed, for example, as indented pins that are hammered into boreholes in the sub-structure. In another
20 embodiment the blocking bodies are formed as headless screws, which may be screwed into threaded boreholes.

Depending on the execution type, mounting the blocking bodies either requires a striking tool or a screwdriver. Either the blocking bodies are integrally realized with the
25 sub-structure during manufacturing or they are pre-mounted into the sub-structure on-site prior to fastening the fitting. This will guarantee that even the small

construction parts are not lost. The blocking bodies build a block against horizontal loads in the passages, such that it is impossible to fold the cover away. In the event disassembling should be required, the cover will be
5 displaced, in the spring relieving vertical direction as far as possible, such that the grooves and the pins can subsequently be disengaged while folding the cover away by means of small tensile load. On the opposite side, the connection between the passages and the blocking
10 bodies can then be separated through simple vertical shifting of the cover. No tools are required neither for mounting nor for disassembling the cover. This circumstance eliminates damages to the usual sensitive surfaces of the covers and to the plate-shaped
15 components.

Invisible from the outside, the connection between the resiliently supported pins and the grooves is preferably positioned at the side of the fitting oriented towards the viewer, while the blocking connections are positioned on
20 the far side of the fitting oriented away from the viewer.

The invention will now be described in more detail, reference being made to the embodiment examples.

Figure 1 illustrates a plan view on a fitting.

Figure 2 illustrates a frontal view of the fitting of
25 Figure 1.

- Figure 3 illustrates a plan view on another embodiment of a fitting.
- Figure 4 illustrates a frontal view of the fitting according to Figure 3.
- 5 Figure 5 illustrates a plan view on another embodiment of a fitting.
- Figure 6 illustrates a frontal view of the fitting according to Figure 5.
- 10 Figure 7 illustrates a plan view on another embodiment of a fitting.
- Figure 8 illustrates a frontal view of the fitting according to Figure 7.
- Figure 9 illustrates a view on a lock fitting.
- 15 Figure 10 illustrates a frontal view of the lock fitting according to Figure 9.
- Figure 11 illustrates a view on another embodiment of a lock fitting.
- Figure 12 illustrates a frontal view of the lock fitting according to Figure 11.
- 20 Figure 13 illustrates a view on another embodiment of a lock fitting.

- Figure 14 illustrates a frontal view of the lock fitting according to Figure 13.
- Figure 15 illustrates a view on another embodiment of a lock fitting.
- 5 Figure 16 illustrates a frontal view of the lock fitting according to Figure 15.
- Figure 17 in a plan view, illustrates a pair of handle devices, which can be mounted on both sides of a non-illustrated pivoting panel.
- 10 Figure 18 illustrates a perspective view of handle devices.
- Figure 19 illustrates a fitting with integral handle device in a view from above.
- Figure 20 illustrates a lateral view of the fitting according to Figure 19.
- 15 Figure 21 illustrates another fitting with integral handle devices in a view from above.
- Figure 22 illustrates a lateral view of the fitting according to Figure 21.
- 20 Figure 23 illustrates a partially cut-out view of a mounted fitting according to Figures 5 and 6.

Figure 24 illustrates a view from underneath on the fitting mounted at a glass edge according to Figure 23.

5 Figure 25 illustrates a sectional view of a non-mounted cover.

In the following description, similar or similarly functioning construction parts are referenced with identical numerals, particularly mirror-symmetrical construction parts presenting identical numerals.

10 The fittings 1, diagrammatically illustrated in Figures 1 to 8, each consist of mirror-symmetrical fitting-halves 2 and 3, each fitting half 2 and 3 presents a sub-structure 42 and a cover 4 fastened thereto. The sub-structure 42 can be assembled from a base section 43 and from a
15 functional insert 44.

Such fittings 1 are used, for example, to rigidly or movably connect glass elements in toughened glass installations. The glass elements present boreholes or cut-outs to fasten the base sections 43 on both sides,
20 preferably clamp screwed, with an inserted layer as a glass protection if necessary. The functional inserts 44 are subsequently fastened to these base sections 43, which inserts allow, for example, the mobile support or rigid fastening of an adjoining glass element. The fitting
25 system's modular construction allows for interchangeable utilization of base sections 43, functional inserts 44, and

covers 4. The glass elements may present, for example, a coloured or profiled execution.

In the following, more detailed discussion and illustration of embodiments will be restricted to the adjacent region to the fittings 1. The sub-structure 42, respectively the base section 43 thereof and the functional inserts 44 are not illustrated, as they are each completely invisibly positioned underneath the corresponding cover 4. Therefore, all functional components are visually advantageously covered.

Figures 1 and 2 illustrate a first embodiment of an inventive fitting 1. The fitting-halves 2 and 3 thereof and the covers 4 thereof are illustrated in mounted condition in a view on a non-illustrated edge of a glass element. Due to the mirror-symmetry of the fitting-halves 2 and 3, the following description is valid for both fitting-halves 2 and 3. Each cover 4 presents two horizontally oriented lateral surfaces 5 and 6 having between them a frontal surface 7 extending from a vertical edge 8 towards an opposite vertical edge 9. The cover 4 presents a rectangular elongated exterior shape. The frontal surface 7 presents a convex curvature, oriented to the outside, which, in the drawing, starting at the right edge 9 increases towards the left edge 8. The right edge 9 has a protruding angled border surface 10 embracing a vertical edge of the glass element. The border surface 10 is likewise convex shaped towards the outside. At the left

edge 8, due to the increased curvature, the frontal surface 7 extends into an acute angle such as to form a direct glass support in that area. Adjacent to the glass edge, the lateral surface 5 is partially executed with prolongations 11 and 12 which cover the glass edge. A recess 13 is provided between the prolongations 11 and 12, through which the components, linking the functional inserts and having for example the shape of a bearing bolt, pass to be connected.

Figures 3 and 4 illustrate a modified embodiment of Figures 1 and 2, having a shortened border surface 10 formed at the vertical glass edge. Figures 5 and 6 illustrate another embodiment with no prolongations being conformed to the lateral surface 5. The lateral surface 5 presents a recess 14 such that functional inserts may cooperate.

Figures 7 and 8 illustrate another embodiment suitable for a fitting 1 that rigidly interconnects an overpanel and a lateral panel, at which another glass element is movably supported. In this case, the construction parts essentially correspond to the previously described embodiments. Each fitting-half 2 and 3 is formed for stationary connecting a lateral panel and is additionally provided with an angled extension 15. The frontal surface 7 is regularly curved from an edge 8 towards an opposite edge 9 and extends into an acute angle on both sides directly on the glass surface. The lateral surface 5 is

likewise provided with prolongations 11 and 12 and a recess 13.

The lock fittings 21 diagrammatically illustrated in Figures 9 to 16 are each composed of fitting-halves 22 and 23, each fitting-half 22, 23 presenting a sub-structure 42 and a cover 25 fastened thereto. The sub-structure 42 is assembled from a base section 43 and from a functional insert 44.

Such lock fittings 21 are used for example with glass elements serving as a door, which are supported at a fixed lateral glass panel or at an overpanel. The discussion of the embodiment examples in more detail is always limited to one fitting-half due to identical functionality.

Figures 9 and 10 illustrate a first embodiment of the lock fitting 21 as a so-called corner fitting, the lock fitting 21 being mounted at the top and/or bottom corner at the pivoting side of a non-illustrated glass element. In this case the glass element should present a push pad in the centre of the door and will be locked with respect to its surroundings by means of locks located in the corner fittings. This lock fitting's 21 covers 25 are illustrated in mounted condition in a view on the non-illustrated edge of a glass element. The covers 25 are mirror-symmetrically positioned on opposite sides and each present a rectangular, horizontally elongated exterior

shape. Each cover 25 presents two horizontally oriented lateral surfaces 28 and 29, having a frontal surface 30 between them extending from an edge 31 to another edge 32. The frontal surface 30 presents a convex curvature oriented towards the outside, which, in the drawing, starting at the right edge 31 increases towards the left edge 32. The right edge 31 has a protruding angled border surface 33 embracing the vertical edge of the glass element. At the left edge 32, due to the increased curvature, the frontal surface 30 extends into an acute angle such as to form a direct glass support in that area. Adjacent to the glass edge, the lateral surface 28 is partially executed with prolongations 34, 35, 36, which thus cover the glass edge. Recesses 37, 38 are provided between the prolongations 34, 35, 36, through which the components provided in the functional inserts vertically pass, having for example the shape of a locking bolt. The cover 25 presents in the frontal surface 30 thereof an extension 39 covering the non-illustrated lock.

Figures 11 and 12 present a modified embodiment of Figures 9 and 10, such that the lock fitting 21 can be used in the centre of a door. Therefore no prolongations are conformed to the lateral surfaces 28 and 29. In this case the locking bolt is horizontally actuated.

Figures 13 and 14 illustrate an embodiment of the inventive lock fitting 21 as a centre fitting, the lock fitting 21 being mounted preferably in the centre at the pivoting

side of a glass element. In this case, the lock fitting 21 may present a non-illustrated door lever handle having a latch and a lock with a dead bolt, which cooperate with corresponding fittings of a non-illustrated strike plate. The covers 25 of this lock fitting 21 are illustrated in mounted condition in a view on the non-illustrated vertical edge of a glass element. The covers 25 each present a rectangular, vertically elongated exterior shape. Each cover 25 presents two vertically oriented lateral surfaces 28 and 29 having between them a frontal surface 30 extending from a horizontal edge 31 to a horizontal edge 32 on the opposite side. The frontal surface 30 presents a convex curvature, oriented to the outside, which, in the drawing, starting at the lower edge 31 increases towards the upper edge 32. The lower edge 31 has a protruding angled border surface 33 sitting close to the surface of the glass element. At the upper edge 32, due to the increased curvature, the frontal surface 30 extends into an acute angle such as to form a direct glass support in that area. Recesses 37 and 38 are provided in the lateral surface 28; through which pass the components, provided in the functional inserts, having for example the shape of a latch and a locking bolt. Apertures 40 and 41 are provided in the frontal surface 30 through which the lock can be actuated via a door lever handle. The fitting-half 23 on the opposite side has the same shape, however with a much flatter design.

Figures 15 and 16 illustrate an embodiment of the inventive lock fitting 21 executed as a centre fitting in horizontal orientation, the lock fitting 21 being preferably mounted in the centre at the pivoting side of a glass element. In this case the lock fitting 21 presents a door lever handle with a latch and a lock with a dead bolt, which cooperate with corresponding receptions in a strike box fitting positioned in a lateral panel. The fitting-halves 26 and 27 of the strike box fitting 24 are likewise illustrated and, in continuing the curved shape of the fitting-halves 22 and 23 of the lock fitting 21, they form an ergonomic unit. The covers 25 are positioned on opposite sides and each present a rectangular, horizontally elongated exterior shape. Each cover 25 presents two horizontally oriented lateral surfaces 28 and 29, having between them a frontal surface 30 extending from a vertical edge 31 towards an opposite vertical edge 32. The frontal surface 30 presents a convex curvature, oriented to the outside, which, in the drawing, starting at the left edge 31 increases towards the right edge 32. The left edge 31 has a protruding angled border surface 33. At the right edge 32, due to the increased curvature, the frontal surface 30 extends into an acute angle such as to form a direct glass support in that area. Recesses 37 and 38 are provided in the border surfaces 33 on the frame-side, through which the components, provided in the functional inserts, having for example the shape of a latch and of a dead bolt, pass horizontally. The form of the

strike box fitting 24 positioned in the lateral panel subsequently connects to the border surface 33 of the lock fitting 31 and extends into an acute angle on the surface of the lateral panel. Thus, the complete fitting
5 builds one whole and presents a regular curvature over the entire frontal surface 30.

A handle device 58 that can be inserted into the functional unit of a lock fitting 21 is described in Figures 17 to 22.

- 10 The handle device 58 is essentially composed of a handle member 59 and of an integral connecting component positioned at one end, which realizes the non-positive connection to a non-illustrated pivoting panel, for example a door, respectively the fitting thereof.
- 15 Both the handle member 59 and the connecting component 60 present a round cross-section. The handle devices 58 are made of stainless steel, of bronze, of brass or of another metal.

The embodiment example according to Figure 17
20 illustrates a set of two handle devices 58, which can be mounted on both sides of a pivoting panel. The handle devices 58 are identical and can be mounted mirror-symmetrically with respect to each other. The respective handle member 59 is convex arched over the entire
25 longitudinal extension and formed in an inclined manner towards the inside. Thus, a handle shape is achieved,

which matches the natural position of the hand, such as to guarantee an advantageous haptic feeling. The handle member 59 is made without profile and presents a regular round cross-section.

- 5 The free end 61 of the handle member 59 is limited by an oblique, preferably planar fore-part 62, the region thereof proximate to the pivoting panel being positioned further away from the connecting component 60 than the region distal to the panel. The transition areas between the fore-
10 part 62 and the handle member 59 either present chamfers or radii 63.

- The handle member 59 passes in an angle, as one piece and with an angle smaller than 90° , over into the connecting component 60. The inward inclination of the
15 handle member 59 is thus achieved. The connecting component 60 is realized without profile and presents a round cross-section. The diameter D of the connecting component 60 preferably increases, starting at the handle member 59. The lever pin 64 is positioned inside the
20 connecting component 60, pin which mechanically interconnects the handle device 58 with the closing mechanism and/or an opposite handle device 58.

- The handle devices 58 in Figures 19 to 22 are mounted at lock fittings 21, which are each composed of fitting-
25 halves 22 and 23, each fitting-half 22, 23 presenting therein an invisible sub-structure 42 and a cover 25

fastened thereto. The sub-structure 42 may be assembled from a base section 43 and from a functional insert 44.

Figures 19 and 20 illustrate an embodiment of the fitting 21 as a centre fitting in horizontal orientation, the fitting 21 being preferably mounted in the centre of the pivoting side of a glass element. In this case, the inventive handle device 58, actuating a latch via a closing mechanism that is positioned inside the fitting 21, is integrated into the fitting 21. The latch cooperates with a corresponding reception of a non-illustrated strike box fitting positioned at a lateral panel. In continuing the curved shape of the fitting-halves 22 and 23, the fitting-halves of the strike box fitting result in an ergonomic whole.

The fitting 21 illustrated in Figures 21 and 22 differs from the fitting 21 illustrated in Figures 19 and 20 merely in that an additional lock may be inserted into a corresponding aperture 40. A key, which may be introduced into the lock, actuates, in this case via the closing mechanism in the fitting 21, a bolt which will engage in a corresponding reception of the strike box fitting.

With reference being made to Figures 23 to 25, the principal construction of a fitting 1 will be described in more detail. In comparison, the difference in the construction of a lock fitting 21 consists in the integration

of a lock and/or a handle device. The fitting 1 is composed of mirror-symmetrical fitting-halves 2 and 3, each fitting-half 2, 3 presenting a sub-structure 42 and a cover 4 fastened thereto. The sub-structure 42 is assembled from a base section 43 and from a functional insert 44.

As already mentioned above, such fittings 1 serve, for a rigid or movable connection of toughened glass elements 45 in toughened glass installations. The glass elements 45 present boreholes or apertures for fastening the base sections 43 on both sides, preferably clamp screwed, with an inserted layer as a glass protection if necessary. Subsequently, the functional inserts 44 are fastened to these base sections 43, which allow, for example, movable bearing or rigid fastening a glass element 45. The fitting system's modular construction allows for interchangeable utilization of base sections 43, functional inserts 44 and covers 4. The glass elements 45 may present for example a coloured or profiled execution.

The base section 43 is flat, essentially rectangular-shaped and presents at the upper side wall 46 thereof, illustrated in Figure 23, two pocket boreholes 47, which are spaced apart from each other, in vertical orientation, body-inwards, and which body-outwards are narrowed by means of a reduction 48. In each pocket borehole 47 is provided a spring 49 which presses a graded pin 50 against the reduction 48, pin which thus is positioned

captive inside the pocket borehole 47. When the spring 49 is in the rest position, the pin 50 protrudes from the top surface of the longitudinal surface 46. The lower side wall 51 of base section 43, illustrated in Figure 23, presents two pocket boreholes 52, which are spaced apart from each other and in vertical orientation, body-inwards. The boreholes 52 extend axially aligned with the pocket boreholes 47.

Each cover 4 presents two horizontally oriented lateral surfaces 5 and 6, having between them a frontal surface 7 extending from a vertical edge 8 towards an opposite vertical edge 9. The cover 4 presents a rectangular exterior shape. The frontal surface 7 presents a convex curvature, oriented to the outside, which, starting at the edge 9 increases towards an edge 8. The edge 9 has a protruding angled border surface 10 embracing a vertical edge of the glass element 45. At the edge 8, due to the increased curvature, the frontal surface 7 extends into an acute angle such as to form a direct glass support in that area. Adjacent to the glass edge, the lateral surface 6 is executed with a recess 14, through which the components provided in the functional inserts 44 pass to be connected, having for example the shape of a bearing bolt 53.

Between the frontal surface 7, the lateral surfaces 5 and 6 and the borders 8 and 9, a reception chamber 54 is formed inside, underneath which the base section 43

completely disappears, once mounting is completed. The lateral surface 5 presents on the inside two grooves 55, which are spaced apart from each other. The lateral surface 6 is penetrated by two passages 56 that are spaced apart from each other.

Prior to mounting the sub-structure 42 to the glass element 45, blocking bodies 57 in the shape of indented pins are friction-fit forced into the boreholes 52. According to a non-illustrated embodiment, the blocking bodies 57 may be realized integral with the sub-structure 42 during manufacturing. After subsequent mounting of the sub-structure 42, the lateral surface 6 of the cover 4 is placed diagonally at the side wall 51 of the base section 43, such that the passages 56 engage positively with the blocking bodies 57. When the cover 4 is subsequently folded in the direction of the glass element 45, the sub-structure 42 is completely confined in the reception chamber 54. In this case, the pins 50 are resiliently pressed back into the respective pocket boreholes 47. Under the influence of the springs 49 the pins 50 are pressed into the associated grooves 55 during a corresponding final adjustment of the cover 4. For the time being, the cover 4 is fixed in this position. The described procedures are to be repeated on both sides of the glass element.

A possible disassembly is done in reverse order. In this case, the cover 4 is displaced in the spring-relieving

vertical direction as far as possible, such that the grooves 55 and the pins 50 can subsequently disengage. while folding away the cover 4 by means of small tensile load. On the lateral surface 6 the connection between the passages 56 and the blocking bodies 57 can be separated simply through vertical shifting of the cover 4.

REFERENCES

	1	fitting
	2	fitting-half
	3	fitting-half
5	4	cover
	5	lateral surface
	6	lateral surface
	7	frontal surface
	8	edge
10	9	edge
	10	border surface
	11	prolongation
	12	prolongation
	13	recess
15	14	recess
	15	extension
	21	lock fitting
	22	fitting-half
	23	fitting-half
20	24	strike box fitting
	25	cover
	26	strike box fitting-half
	27	strike box fitting half

	28	lateral surface
	29	lateral surface
	30	frontal surface
	31	edge
5	32	edge
	33	border surface
	34	prolongation
	35	prolongation
	36	prolongation
10	37	opening
	38	opening
	39	extension
	40	aperture
	41	aperture
15	42	sub-structure
	43	base section
	44	functional insert
	45	glass element
	46	side wall
20	47	pocket borehole
	48	reduction
	49	spring
	50	pin
	51	side wall

	52	borehole
	53	bearing bolt
	54	reception chamber
	55	groove
5	56	passage
	57	blocking body
	58	handle device
	59	handle member
	60	connecting component
10	61	free end
	62	fore-part
	63	radius
	64	lever pin
	D	diameter of connecting component

CLAIMS

1. A fitting for rigid and/or movable fastening of a glass element to at least one adjoining glass element, the fitting (1) being assembled from fitting-halves (2, 3), which each consist of a sub-structure (42) fastened to the glass element (45) and of a cover (4) capping the sub-structure (42), characterized in that the cover (4) presents a frontal surface (7) extending between horizontally oriented lateral surfaces (5, 6), which extends convex curved from a vertical edge (8) towards an opposite vertical edge (9).
2. A lock fitting cooperating with a strike box fitting (24), the lock fitting (21) and the strike box fitting (24) being assembled from fitting-halves (22, 23, 26, 27), which each consist of a sub-structure (42) being fastened to the glass element (45) and presenting at least one lock, and of a cover (25) capping the sub-structure (42), characterized in that the cover (25) presents a frontal surface (30) extending between lateral surfaces (28, 29), which extends convex curved from an edge (31) towards an opposite edge (32) and presents extensions (39) and/or apertures (40, 41).

3. A fitting according to claim 1 or 2, characterized in that the curvature is irregular or regular.
4. A fitting according to any of the claims 1 to 3 characterized in that at least one edge (9, 31)
5 presents an angled border surface (10, 33), the exterior surface thereof being curved.
5. A fitting according to any of the claims 1 to 4, characterized in that the cover (4, 25) tapers to an acute angle, at least at the edge (8, 32).
- 10 6. A fitting according to any of the claims 1 to 5, characterized in that at least one lateral surface (5, 28, 29) presents prolongations (11, 12, 34, 35, 36).
- 15 7. A fitting according to any of the claims 1 to 6, characterized in that the lateral surfaces (5, 6, 28) and/or the prolongations (11, 12, 34, 35, 36) present recesses (13, 14, 37, 38).
- 20 8. A fitting according to any of the claims 1 to 7, characterized in that the cover (4, 25) is of rectangular shape.
9. A fitting according to any of the claims 1 to 7, characterized in that the cover (4) is formed in an L-shape and presents an angled extension (15).

10. A fitting according to any of the claims 1 to 9, characterized in that the cover (4, 25) sits close, and at least partially, flat at the sub-structure (42).
- 5 11. A fitting according to any of the claims 1 to 10, characterized in that the cover (4, 25) is made of metallic material, of plastic material or of hybrid material.
- 10 12. A fitting according to any of the claims 1 to 11, characterized in that the cover (4) can be resiliently and at least friction-fit fastened at the sub-structure (42).
- 15 13. A fitting according to any of the claims 1 to 12, characterized in that the sub-structure (42) presents at least two pocket boreholes (47) spaced apart from each other, in body-inward orientation and having a reduction (48), which is in body-outward orientation.
- 20 14. A fitting according to claim 13, characterized in that a graded pin (50) is positioned in the pocket borehole (47) between a spring (49) and the reduction (48).
- 25 15. A fitting according to any of the claims 1 to 14, characterized in that the sub-structure (42) presents at least two blocking bodies (57),

which are spaced apart from each other and in body-outward orientation.

16. A fitting according to claim 15, characterized in that the blocking bodies (57) can be inserted into boreholes.
17. A fitting according to claim 15 or 16, characterized in that the pocket boreholes (47) and the blocking bodies (57) are formed at opposite side walls (46, 51) of a rectangular sub-structure (42) and are oriented axially aligned to each other.
18. A fitting according to any of the claims 1 to 17, characterized in that the cover (4) presents on the interior side at least two grooves (55), which are spaced apart from each other.
19. A fitting according to any of the claims 1 to 18, characterized in that the cover (4) presents at least two passages (56), which are spaced apart from each other.
20. A fitting according to any of the claims 15 to 19, characterized in that the blocking bodies (57) and the passages (56) can be positioned in alignment to each other.
21. A fitting according to any of the claims 18 to 20, characterized in that the grooves (55) and the

passages (56) are formed at opposite lateral surfaces (5, 6) of a rectangular cover (4).

22. A fitting according to any of the claims 1 to 21,
5 characterized in that the sub-structure (42) is
composed of a base section (43) and of a
functional insert (44).
23. A fitting according to any of the claims 1 to 22,
characterized in that the fitting-halves (2, 3, 22,
23, 26, 27) are mirror-symmetrically formed with
10 respect to each other.
24. A lock fitting according to any of the claims 2 to
23, characterized in that handle devices and/or
locks can be mounted into the sub-structure
(42).
- 15 25. A lock fitting according to any of the claims 2 to
24, characterized in that the lateral surfaces (28,
29) extend horizontally and the edges (31, 32)
extend vertically.
- 20 26. A lock fitting according to any of the claims 2 to
24, characterized in that the lateral surfaces (28,
29) extend vertically and the edges (31, 32)
extend horizontally.
27. A lock fitting according to any of the claims 2 to
26, characterized in that the curvature of the

lock fitting (21) continues in the strike box fitting (24).

28. A lock fitting according to claim 24,
characterized in that the handle device (58)
5 consists of a handle member (59) and of a
connecting component (60) non-positively
positioned thereto, the handle member (59)
extending convex curved and being formed
inwards inclined, and in that at least the handle
10 member (59) presents a round cross-section.
29. A lock fitting according to claim 28,
characterized in that the handle member (59)
presents a regular or irregular curved shape.
30. A lock fitting according to claim 28 or 29,
15 characterized in that one free end (61) of the
handle member (59) is not angled.
31. A lock fitting according to any of the claims 28 to
30, characterized in that the free end (61)
presents an oblique fore-part (62).
- 20 32. A lock fitting according to any of the claims 28 to
31, characterized in that fore-part (62) presents
radii (63) or chamfers.
33. A lock fitting according to any of the claims 28 to
32, characterized in that the connecting
25 component (60) presents a round cross-section.

34. A lock fitting according to any of the claims 28 to 33, characterized in that, starting at the handle member (59), the diameter (D) of the connecting component (60) increases.
- 5 35. A lock fitting according to any of the claims 28 to 34, characterized in that the handle member (59) and the connecting component (60) are made of stainless steel.
- 10 36. A lock fitting according to any of the claims 28 to 35, characterized in that the handle member (59) and the connecting component (60) are made of bronze.
- 15 37. A lock fitting according to any of the claims 28 to 36, characterized in that the handle member (59) and connecting component (60) are made of brass.
- 20 38. A lock fitting according to any of the claims 28 to 37, characterized in that the handle member (59) and connecting component (60) are made of aluminium.
39. A lock fitting according to any of the claims 28 to 38, characterized in that the handle member (59) and connecting component (60) are made of investment casting.

40. A lock fitting according to any of the claims 28 to 39, characterized in that the handle member (59) and connecting component (60) are made of die-casting.
- 5 41. A lock fitting according to any of the claims 28 to 40, characterized in that the handle device (58) can be mounted on one or on both sides of door panels, window panels or similar pivotably supported panels.
- 10 42. A lock fitting according to any of the claims 28 to 41, characterized in that the handle device (58) can be integrally mounted in fitting-halves (22, 23) and strike box fittings.