

FIXING DEVICE FOR A PANE OF GLASS

Description

The present invention relates to an attachment device to attach a glass pane at a wall, at a substructure fixed to a building or the like, making use of a clamping fitting fastening
5 the glass pane and a partially limited three-dimensional articulated mounting supported at the clamping fitting.

On the one hand, attachment devices belonging to the above-mentioned species require that the proper clamping fitting or
10 single point fixing fastening the glass pane be executed in a way that stress introduced into the glass pane can be neutralised as far as possible in the region of the clamping fitting itself. On the other hand, it is a must to execute the mounting connected to the clamping fitting such that the
15 clamping fitting and thus the glass pane can be tension-free connected to a sub-structure fixed to a building, to a wall or even to another glass pane. In this case, especially when it comes to connect to a sub-structure or to a wall, it should be possible to compensate also more important building
20 tolerances through the mounting's adaptability.

According to an application of the applicant (file number 199 15 193.8), which is not yet included in the state-of-the-art, the mounting has a partially limited three-dimensional articulated support in the clamping fitting, whereby a coupling bell is
25 supported with adjustable pre-stress at the interior clamping element, a permanently elastic spring member is arranged between said coupling bell and the interior clamping element, which member allows a relative movement of the coupling bell with regard to the clamping element.

The object of the invention is to execute the attachment device such that through the assigned mounting, the glass pane being tension-free fastened, an adaptation to more important building tolerances of a wall, of a sub-structure or the like is possible.

The invention solves the problem with the teaching according to claim 1.

Accordingly the mounting presents a holding tenon fixable at the clamping fitting, at which tenon's exterior free end is arranged a connector joint, that can be made rigid, for the connection of a compensating axle, which at its end opposite to the holding tenon can be connected with an adapter via a stiffening articulation to a wall, to a sub-structure or the like.

According to the inventive solution, two articulations are arranged between the glass pane and the sub-structure, such that during assembly a perfect adaptation of the adapter to the sub-structure or to the wall, which represents the proper connection, is guaranteed. Once both articulations are stiffened, they result in a rigid attachment unit, exception made of the restricted three-dimensional articulation in the region of the clamping fitting.

Further inventive features are characterised by the sub-claims of the invention.

In a preferred embodiment of the invention, articulated forks are executed respectively at the free ends of the holding tenon and of the adapter, which are connected with corresponding articulated fishplates at the opposite free ends of the compensating axle to form a stiffening articulation. It is

obvious that in kinematic inversion, articulated forks can be arranged at the compensating axle.

The articulated forks of the holding tenon and of the adapter and the articulated fishplates of the compensating axle
5 present aligned boreholes provided to accommodate clamp screws serving to obtain the articulations' stiffness.

As already mentioned above, a partially limited three-dimensional articulated support of the mounting exists at the clamping fitting fastening the glass pane; according to the
10 invention this is realised in that the holding tenon is locatable at the clamping fitting by means of a union nut overlapping the coupling bell of the clamping fitting.

In order to achieve on the one hand comfortable adjustment or adaptation of the mounting, especially of the adapter during
15 assembly at the wall or the like, and on the other hand to guarantee the individual connections including the securing of the holding tenon by means of the union nut, the union nut and the compensating axle present wrench areas at their envelope surfaces.

20 In further execution of the invention, the articulated fishplates can be rotatably supported in the compensating axle.

Hereinafter the invention is explained in detail on the basis of one embodiment example:

Figure 1 shows: the attachment device in a perspective
25 exploded view.

Figure 2 shows: a frontal view.

Figure 3 shows: a top view of the illustration according to Figure 2.

With reference to Figure 1, an attachment device 1 basically consists of three construction units, namely of a clamping
5 fitting 4, of a compensating axle 9 and of an adapter 12, whereby between these two components two articulations 8 and 11 are built (refer to Figure 3), which can be made rigid. The complete mounting is identified by the numeral 5.

A glass pane 2 is fastened by means of the clamping fitting 4.
10 A holding tenon 6 is maintained within the clamping fitting 4 between a coupling bell 19 and a union nut 20 of the clamping fitting 4. A free end 7 of the holding tenon 6 is executed as articulated fork 13; this is likewise the case for the adapter 12, which also presents an articulated fork 16. At its free ends
15 respectively 14, the compensating axle 9 is equipped with articulated fishplates 15, which the articulated forks 13, 16 will accommodate. Aligned boreholes 17 penetrate the articulated fishplates 15 as well as the articulated forks 13, 16. The articulations 8 and 11 can be made rigid by means of clamp
20 screws 18 engaging through these aligned boreholes 17.

The illustrations further show that one envelope surface 21 of the union nut 20 presents a wrench area 22, this is likewise the case for an envelope surface 23 of the compensating axle 9; the corresponding wrench area is identified with the
25 numeral 24.

For adaptation for example to a wall 3, the adapter 12 consists of two construction units rotatable in opposite directions with regard to each other, which can be made rigid with regard to each other by means of hexagon sockets 25.

References

	1	Attachment device
	2	Glass pane
	3	Wall
5	4	Clamping fitting
	5	Mounting
	6	Holding tenon
	7	Free end of the holding tenon
	8	Stiffening connector joint
10	9	Compensating axle
	10	End of the compensating axle
	11	Stiffening articulation
	12	Adapter
	13	Articulated fork
15	14	Free end of the compensating axle
	15	Articulated fishplates
	16	Articulated fork
	17	Bore holes
	18	Clamp screw
20	19	Coupling bell
	20	Union nut
	21	Envelope surface
	22	Wrench area
	23	Envelope surface
25	24	Wrench area
	25	Hexagon socket



Patent claims

1. An attachment device to attach a glass pane (2) at a wall (3), at a sub-structure fixed to a building or the like, making use of a clamping fitting (4) fastening the glass pane (2) and of a mounting (5) with a partially limited three-dimensional articulated support at the clamping fitting (4), characterised in that the mounting (5) presents a holding tenon (6) locatable at a clamping fitting (4), at which tenon's exterior free end (7) is arranged a stiffening connector joint (8) for the connection of a compensating axle (9), which is connected at its end (10) opposite to the holding tenon (6) via a stiffening articulation (11) with an adapter (12) provided for the attachment at a wall (3), at a sub-structure or the like.
2. An attachment device according to claim 1, characterised in that an articulated fork (13) is arranged at the exterior free end (7) of the holding tenon (6).
3. An attachment device according to the claims 1 and 2, characterised in that articulated fishplates (15) are arranged at the opposite free ends (10, 14) of the compensating axle (9).
4. An attachment device according to any of the claims 1 to 3, characterised in that the adapter (12) presents an articulated fork (16).
5. An attachment device according to any of the claims 1 to 4, characterised in that the articulated



5 forks (13, 16) of the holding tenon (6) and of the adapter (12) and the articulated fishplates (15) of the compensating axle (9) all present aligned bore holes (17) to accommodate a clamp screw (18).

6. An attachment device according to any of the claims 1 to 5, characterised in that the holding tenon (6) is locatable at the clamping fitting (4) by means of a union nut (20) overlapping a coupling bell (19) of the clamping fitting (4).

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7. An attachment device according to claim 6, characterised in that the union nut (20) presents a wrench area (22) at its envelope surface (21).

8. An attachment device according to any of the claims 1 to 7, characterised in that the compensating axle (9) presents a wrench area (24) at its envelope surface (23).

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9. An attachment device according to any of the claims 1 to 8, characterised in that the articulated fishplates (15) are rotatably supported in the compensating axle (9).

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