

The invention relates to a device for fixing glazing elements to facade sections, such as facade pillars or bars or element facades, with clamping strips held via screws (see DE-A-3,406,017).

Apart from clamping the margins in position via clamping strips, it is known to support the relatively heavy glazing elements on facades by means of mountings made of a flat material in order to absorb the dead weight. This type of mounting arrangement is costly as regards material and assembly work required.

The object of the invention is to create an inexpensive support for glazing elements on facades.

This object is achieved according to the invention by threaded studs fixed to the facade sections, by metal bolts which can be screwed onto the threaded stud and have a large outside diameter in the screw-on area, a screw-in area of small diameter for the screws of the clamping strip adjoining the screw-on area of the metal bolt, and by bushes, which can be slipped onto the screw-in area, for bearing against the glazing element.

The metal bolt has a base of relatively large diameter so that bending moments originating from the glazing elements can be readily transmitted into the facade section. The actual seating of the glazing element consists of the bush which can be slipped onto the screw-in area for the screws of the clamping strip and can adapt to inaccuracies which occur.

The metal bolts are preferably made of aluminium or high-grade steel.

In a preferred embodiment, a conical transition area is provided between the screw-on area and the screw-in area of the metal bolt.

One blind bore each is preferably formed in the screw-on area and in the screw-in area of the metal bolt. The metal bolt is therefore not provided with a through-bore, so that optimum strength is achieved.

The slipped-on bush for bearing against the glazing element is preferably made of metal or plastic.

The screws for fixing the clamping strips can be designed to be self-tapping so that the blind bore, provided for accommodating them, of a metal bolt is designed without an internal thread.

5           The bush is preferably designed in the shape of an elongated parallelepiped having recesses, as a result of which optimum support of the glazing element is ensured.

10           An exemplary embodiment of the invention is described in greater detail below with reference to the drawing, in which:

Fig. 1 shows a section through the marginal area of two glazing elements, and

15           Fig. 2 shows a view in the direction of arrow II in Fig. 1.

Fig. 1 shows a facade bar 10 to which glazing elements 12, 14 are fixed via a clamping strip 16. Threaded studs 18 onto which metal bolts 20 are screwed are pushed on or are welded to the facade bar 10. The metal bolts 20 have a screw-on area 22, a conical intermediate area 24 and an area 26 for screwing in fixing screws 28 for the clamping strip 16. The metal bolt 20 is made of aluminium or high-grade steel. Arranged between the glazing elements 12 and 14 and the facade section 10 is a plastic section 30 of solid foam which is formed with grooves 32 for accommodating a section 34, for example made of neoprene, which bears in a sealing manner against the rear sides of the glazing elements 12 and 14. Sections 36 and 38 made of silicone or neoprene are arranged between the clamping strip 16 and the front side of the glazing elements 12 and 14. A bush 40 which can be made of metal or plastic and can adapt to inaccuracies in the assembled parts is slipped onto the area 26 of smaller diameter which is used for the screwing-in of the fixing screws 28 for the clamping strip 16. The bush 40 is in the form of an elongated parallelepiped and is provided with recesses 46, 48, 50, 52 so that good adaption to the marginal surface of the glazing element 12 can take place without the action of peak pressures.

In addition, an intermediate layer 54 made of a relatively soft material is arranged between glazing element and bush. Formed in the metal bolt 20 is a blind hole 42 for screwing onto the threaded stud 18 and a blind hole 44 for screwing in the fixing screw 28 in the screw-in area 26. The metal bolt 20 formed with the relatively thick screw-in area 22 is able to absorb bending moments which originate, in particular, from the glazing element 12 and to transmit them into the bar 10. Through the arrangement of metal bolts of this type, additional supporting elements for removing the dead weight of the glazing elements can be dispensed with.

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Patent Claims

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1. Device for fixing glazing elements (12, 14) to facade sections (10), such as facade pillars or bars or element facades, with clamping strips (16) held via screws (28), characterized by threaded studs (18) fixed to the facade sections (10), by metal bolts (20) which can be screwed onto the threaded stud (18) and have a large outside diameter in the screw-on area (22), a screw-in area (26) of smaller diameter for the screws (28) of the clamping strip (16) adjoining the screw-on area (22) of the metal bolt (20), and by bushes (40), which can be slipped onto the screw-in area (26), for the bearing of the glazing element (12, 14).
2. Device according to Claim 1, characterized in that the metal bolts (20) are made of aluminium or high-grade steel.
3. Device according to Claim 1 or 2, characterized in that a conical transition area (24) is formed between the screw-on area (22) and the screw-in area (26) of the metal bolt (20).
4. Device according to one of Claims 1 to 3, characterized in that one blind bore (42, 44) each is formed in the screw-on area (22) and in the screw-in area (26) of the metal bolt (20).
5. Device according to one of Claims 1 to 4, characterized in that the bush (40) is made of metal or plastic.
6. Device according to one of Claims 1 to 5, characterized in that the screws (28) for the clamping strip (16) are self-tapping.
7. Device according to one of Claims 1 to 6, characterized in that the bush (40) is designed in the shape of an elongated parallelepiped.
8. Device according to Claim 7, characterized in that recesses (46, 48, 50, 52) are formed in the parallelepiped.