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(54) Title: FRAME FOR SEATS IN PUBLIC TRANSPORT VEHICLES

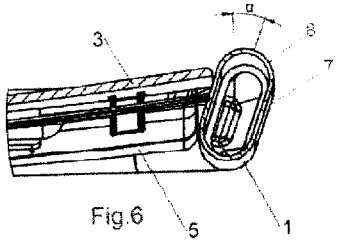

Fig.6

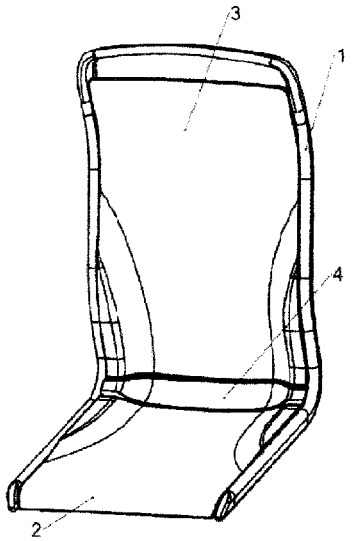

Fig.1

(57) **Abstract:** The subject of the invention is a frame for seats in public transport vehicles, used in vehicles such as trams, school buses or other vehicles for transporting passengers on short distances, with low requirements for the comfort of travel. Wherein the profile (1) has an outline similar to an ellipse and its longer section axis is tilted upwards / outside from the vertical plane, which forms the frame's perpendicular bisector, by angle a (10 - 30)°, preferably 20°.

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Frame for seats in public transport vehicles

The subject of the invention is a frame for seats in public transport vehicles, used in vehicles such as trams, school buses or other vehicles for transporting passengers on short distances, with low requirements for the comfort of travel.

In the currently existing solutions, the frame for seats in public transport vehicles is an ergonomically shaped bent profile that forms a backrest and a seat. Backrest and seat pillows are attached to this profile. The existing solutions use profiles with a ring section - circular or resembling a square.

Such solutions require reinforcements in the section where the seat transits into the backrest, which raises the vehicle's mass and creates a gap between the pillows' side walls and the profile, where dirt can accumulate. Keys, credit cards or change can potentially be trapped in such places. Depending on the thickness of the used fabric, the gap between the seat and the upholstered element can have different dimensions. The profiles used in this solution make for an unsightly design.

The essence of the invention, namely the frame for seats in public transport vehicles in the form of an ergonomically shaped bent profile that creates the backrest and the seat, to which brackets for the seat and backrest pillows are attached consists in that the profile in the section perpendicular to its longitudinal axis has an outline similar to an ellipse and its longer section axis is tilted upwards / to the outside from the vertical plane, which forms the frame's perpendicular bisector, by angle α (10 – 30)°, preferably 20°.

Preferably, the profile is made from two flat surface connected with arching surfaces.

Using the solution according to the invention, the following technical and utilitarian effects were obtained:

- the frame's increased strength caused by the distribution of stresses within the profile,

- the frame's reduced weight due to its increased strength, translating into economic effects of the vehicle's design and operation, such as savings in construction materials and fuel materials,

- the possibility of use of pillows with inclined side surfaces with the seat's frame which, once occupied by a passenger, wedge into the profile's inclined surfaces thus eliminating the gap present in the existing solutions, which prevents the accumulation of dirt in the gaps,

- improved aesthetics of the seat's frame,

- the upholstered elements are propped along the entire profile, because the inclined surfaces of side profiles constitute linear supports for the upholstered elements,

- the need to install additional props for upholstered elements in the seat's frame is eliminated, which reduces the seat's mass and lowers production costs,

- the fabric's thickness and the method of application of upholstered elements are not of key importance,

- the modification of the dimensions of upholstered elements by using thick fabrics does not affect the possibilities of installing these elements in the seat's frame. In the existing solution, the modification of dimensions may render it impossible to install an element.

The subject of the invention in an exemplary, but not limiting embodiment is shown in a drawing in which Fig. 1 shows the seat's frame in a spatial view, Fig. 2 shows the frame making a backrest, Fig. 3 shows the frame making a seat, Fig. 4 shows the frame's section in A-A plane from Fig. 3, Fig. 5 shows

the frame's section in B-B plane from Fig. 2, and Fig. 6 shows the detail C from Fig. 5, and Fig. 7 shows the detail D from Fig. 4

The frame for seats in public transport vehicles is an ergonomically shaped bent L-profile. This profile makes an element of the backrest 2 and seat 3, to which brackets 4 of pillows 5 of the seat 3 and the backrest pillow 2, not shown in the drawing, are attached. In the section in plane perpendicular to its longitudinal axis the profile 1 has an outline similar to an ellipse and its longer section axis is tilted upwards / outside from the vertical plane, which forms the frame's perpendicular bisector, by angle α (10 – 30)°, preferably 20°.

There exist variations of the embodiment where the profile 1 is made from two flat surfaces 7, connected with arching surfaces 8.

Pillows 5 of the seat 6 and pillows of the backrest 2 are introduced into a frame shaped in this manner. Thanks to their flexibility and the inclined side surface, the pillows, when occupied by passengers, tightly adhere to the internal surfaces of profile 1, thus eliminating the gap.

Patent claims

1. The frame for seats in public transport vehicles in the form of an ergonomically shaped bent profile that creates the backrest and the seat, to which brackets for the seat and backrest pillows are attached, wherein the profile (1) in the section perpendicular to its longitudinal axis has an outline similar to an ellipse and its longer section axis is tilted upwards / to the outside from the vertical plane, which forms the frame's perpendicular bisector, by angle α (10 – 30)°, preferably 20°.

2. The frame according to claim 1, wherein the profile (1) is made from two flat surfaces (7), connected with arching surfaces (8).

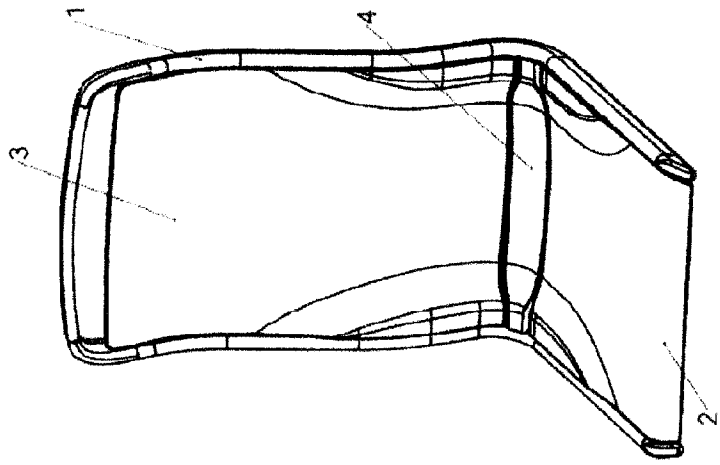

Fig.1

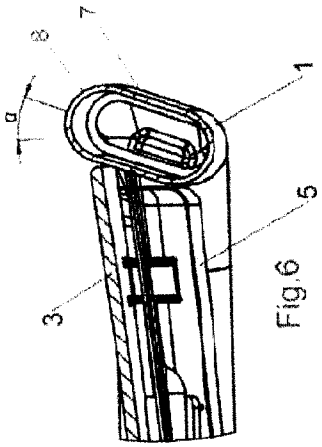

Fig.6

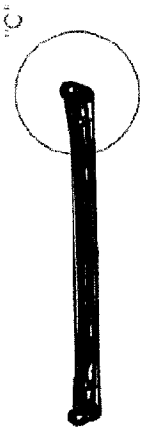

Fig.5

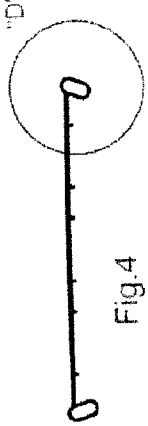

Fig.4

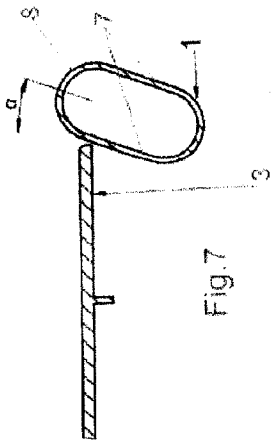

Fig.7

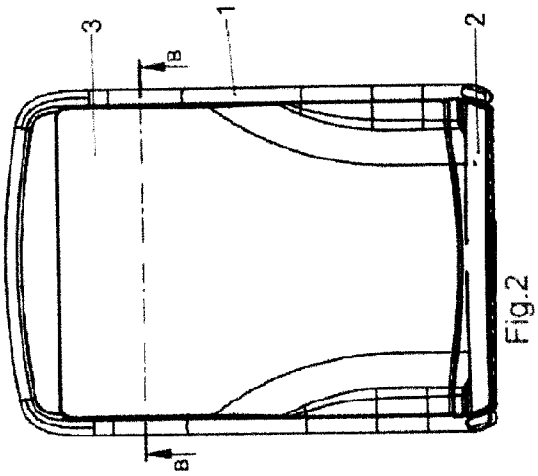

Fig.2

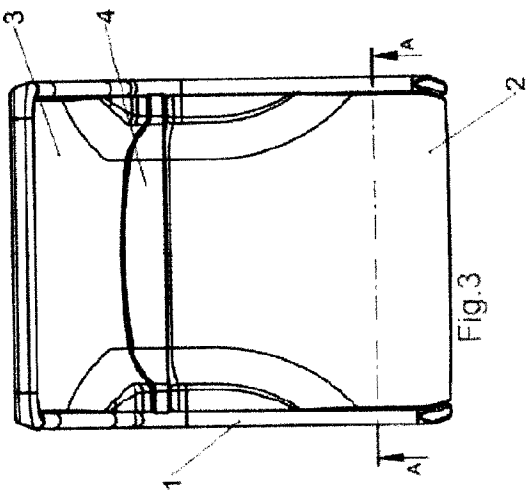

Fig.3