

Spine Pressure Free Schoolbag

Technical field

The present utility model relates to a daily knapsack appliance, more particularly, to a spine-protection non-pressure schoolbag.

Background

It is a universal phenomenon for pupils to bear an over-weighted schoolbag. The over-weighted schoolbag means that the total weight of the schoolbag is more than 15% of the body weight. The over-weighted schoolbag would lead to conditions, for example, pains of neck, shoulder, and back, pain of lumbodorsal muscle and round shoulder. On the other hand, incorrect posture for putting a bag on the back is the main reason of round shoulder and neck pain. The force-bearing point of the schoolbag in prior art is mainly focused on the shoulder, which causes fatigue of shoulder and back muscle readily. Moreover, the schoolbag easily falls backward, resulting in incorrect postures of forward lean body, round shoulder, forward lean head, which thus renders their shoulder, back, lumbodorsal muscle to get tired easily. Thus, correct posture may not be guaranteed. Gradually, the conditions, such as round shoulder, would come in the future.

Summary of the invention

An object of the present utility model is to provide a schoolbag with a function of spine-protection, in order to solve the above problems: the force-bearing point of the schoolbag in prior art being mainly focused on the shoulder, fatigues of shoulder and lumbodorsal muscle of the adolescents which result from easily backward falling schoolbag, deformation of spine column.

Thus, the present utility model provides a spine-protection non-pressure schoolbag comprising a bag made of cloth or leather, on one side of which a pair of straps is arranged, wherein a back plate is secured to the said side of the bag, in which a left protruding strip and a right protruding strip for supporting the lumbodorsal muscles of two sides of spine are arranged on the left and right sides of back plate to interpenetrate the top and lower ends of the bag, respectively, a top convex block and a lower convex block are disposed on the top and lower sides of the back plate, respectively, and a concave portion is provided on the middle portion of the back plate.

According to one embodiment of the present utility model, the left protruding strip has the same thickness with the right protruding strip and the thicknesses of the left protruding strip and the right protruding strip are decreased progressively when getting close to the top end gradually, in which the thickness of the top end is as 80% as that of the lower end.

According to one embodiment of the present utility model, the thickness of the top convex block is as 80% as that of the lower convex block.

According to one embodiment of the present utility model, thickness of the top convex block is as 80% as that of the top ends of the left protruding strip and the right protruding strip; the thickness of the lower convex block is as 80% as that of the lower ends of the left protruding strip (103) and the right protruding strip.

According to one embodiment of the present utility model, the top convex block, the lower convex block, the left protruding strip and the right protruding strip comprise a bottom layer, and an inner layer, a middle layer and an external layer which are successively attached to the bottom layer; and other portions of the back plate comprise a bottom layer and an external layer being attached to the bottom layer.

According to one embodiment of the present utility model, the bottom later is made of PE.

According to one embodiment of the present utility model, the inner layer is made of EPE.

According to one embodiment of the present utility model, the middle layer is made of sponge.

According to one embodiment of the present utility model, the external layer is made of sandwich mesh cloth.

The schoolbag of the present utility model has the following advantages: the left protruding strip and a right protruding strip being provided on the back plate of the schoolbag can support the lumbodorsal muscles of two sides of spine, and relieve the muscle fatigue; furthermore, when the incorrect posture occurs, the top convex block and the lower convex block may abut against the skin of the spine, so as to remind the pupil in time and avoid occurrence of round shoulder due to a long-term incorrect posture.

Brief description of drawings

Further description will be made in combination with the accompanying drawings and the embodiments, in which:

Figure 1 shows a front view of the back plate of the schoolbag, according to a preferred embodiment;

Figure 2 shows a side view of the back plate of the schoolbag, according to a preferred embodiment;

Figure 3 shows a schematic view of the cross section of the protruding strap of the schoolbag, according to a preferred embodiment.

Detailed description of the invention

Figure 1 shows a front view of the back plate of the schoolbag. In one preferred embodiment of the present utility model, a back plate of the

schoolbag is shaped and structured as shown in figure 1. Referring to figure 1, the back plate is substantially shaped to be a rectangle, and is sized to correspond to the schoolbag body. The back plate is secured to the said side of the strip (a schoolbag comprises a bag made of cloth or leather, on one side of which a pair of straps is arranged, which is prior art and is not detailed herein). A left protruding strap 103 and a right protruding strap 104 which interpenetrate the top and lower ends of the bag are disposed on the left and right sides of the back plate, respectively. When some articles are provided in the bag, these two protruding straps are used to support the lumbodorsal muscles of two sides of the spine, and relieve the pressure of the spine, so as to avoid the problems of shoulder and lumbodorsal muscles fatigue or round shoulder resulting from backward-falling of the schoolbag. A top convex block 101 and a lower convex block 102 are disposed on the top side, lower side of the back plate, respectively. If there exists an incorrect posture for putting a bag on the back, the top convex block 101 and the lower convex block 102 may abut against the skin external to the spine of the body and remind of the existed incorrect posture to the adolescents. The remaining portion of the back plate forms a concave portion 105, which has an “H” shape.

Figure 2 shows a side view of the back plate of the schoolbag. The above left protruding strap 103 and a right protruding strap 104 are

symmetrical each other, and have the same thickness. They have a thin top end and thick lower end. In other words, the thicknesses of the left protruding strip and the right protruding strip are decreased progressively when getting close to the top end, in which the thickness of the top end is as 80% as that of the lower end. The protruding straps are configured and shaped to correspond to the spine with a normal physiological curvature, so as to insure that all the surfaces of the protruding straps are attached tightly to the back of the adolescents.

In addition, the thickness of the top convex block 101 is as 80% as that of the lower convex block 102. The object of such a design is to make the thickness of the convex blocks correspond to the spine of a normal body. When there exists an incorrect posture, the top convex block 101 and the lower convex block 102 may both abut against the skin external to the spine of the body for reminding the adolescent.

The thicknesses of the top convex block 101 and the lower convex block 102 are as 80% as that of the top ends of the left protruding strip 103 and the right protruding strip 104. Thus, when the schoolbag is put on the back correctly, neither the top convex block 101 nor the lower convex block 102 can abut against the skin external to the spine of the body. Once there exists an incorrect posture, for example round shoulder, the top convex block 101 and the lower convex block 102 can abut against the skin external to the spine of the body, the adolescent carrying

the schoolbag would not feel comfortable, and will adjust the incorrect posture accordingly and erect the body, so as to effectively avoid the conditions like round shoulder resulting from a long-term incorrect posture.

Figure 3 shows a schematic view of the cross section of the protruding strap of the schoolbag. The top convex block 101, the lower convex block 102, the left protruding strap 103 and the right protruding strap 104 arranged on the back plate have the same structure, referring to the right side of the dash-dotted line of figure 3, each of which comprises a bottom layer 201, and an inner layer 202, middle layer 203 and external layer 204 which are successively attached to the bottom layer 201. Referring to figure 1, the remaining portion of the back plate, i.e. the other area of the back plate other than the convex portions is a concave portion 105, comprises a bottom layer 201 and an external layer 204 being attached to the bottom layer 201 (referring to the left side of the dash-dotted line of figure 3).

The bottom layer 201 of back plate may be made of rigid PE (polyethylene), in order to provide efficient mechanical strength and avoid deformation of the back plate. The inner layer 202 may be made of EPE and the middle layer 203 may be made of sponge, so that there exists elasticity between the back plate and the back of the body. The external layer 204 may be made of sandwich mesh cloth with good breathability

(the dashed-line in figure 3 is used to represent the porous structure of the sandwich mesh cloth). The good breathability of the external layer 204 increases the comfort of the schoolbag. The above layers of the back plate can be adhered together, following by sewing the back plate at the side of bag close to back to provide the schoolbag of the present utility model.

The above description is the preferred embodiment of the present utility model, and is not intended to make any limitation of the present utility model. It should be noted that any modification, equivalent substitutions and improvements, etc., made within the spirit and principle of the present utility model are all included in the protection scope of this utility model.

What is claimed is:

1. A spine-protection non-pressure schoolbag comprising a bag made of cloth or leather, on one side of which a pair of straps is arranged, characterized in that a back plate is secured to the said side of the bag, in which a left protruding strip (103) and a right protruding strip (104) for supporting the lumbodorsal muscles of two sides of spine are arranged on the left and right sides of back plate to interpenetrate the top and lower ends of the bag, respectively, a top convex block (101) and a lower convex block (102) are disposed on the top and lower sides of the back plate, respectively, and a concave portion (105) is provided on the middle portion of the back plate.

2. The schoolbag according to claim 1, characterized in that the left protruding strip (103) has the same thickness with the right protruding strip (104), and the thicknesses of the left protruding strip (103) and the right protruding strip (104) are decreased progressively when getting close to the top end gradually, in which the thickness of the top end is as 80% as that of the lower end.

3. The schoolbag according to claim 2, characterized in that the thickness of the top convex block (101) is as 80% as that of the lower convex block (102).

4. The schoolbag according to claim 3, characterized in that the thickness of the top convex block (101) is as 80% as that of the top ends

of the left protruding strip (103) and the right protruding strip (104); the thickness of the lower convex block (102) is as 80% as that of the lower ends of the left protruding strip (103) and the right protruding strip (104).

5. The schoolbag according to claim 1, characterized in that the top convex block (101), the lower convex block (102), the left protruding strip (103) and the right protruding strip (104) comprise a bottom layer (201), and an inner layer (202), a middle layer (203) and an external layer (204) which are successively attached to the bottom layer (201); and other portions of the back plate comprise a bottom layer (201) and an external layer (204) being attached to the bottom layer (201).

6. The schoolbag according to claim 5, characterized in that the bottom layer (201) is made of PE.

7. The schoolbag according to claim 5, characterized in that the inner layer (202) is made of EPE.

8. The schoolbag according to claim 5, characterized in that the middle layer (203) is made of sponge.

9. The schoolbag according to claim 5, characterized in that the external layer (204) is made of sandwich mesh cloth.