

Improved Travel Support Structure

Field of the Invention

The present invention relates to a support structure for at least partially supporting a user's head when travelling. Particularly, the support structure is to at least partially support a user's head when sleeping whilst sitting in a relatively upright position.

Background to the Invention

The use of travel pillows is common practice for passengers in cars, planes, buses and trains. There are four main types of travel pillow, currently on the market: memory foam pillows, polystyrene bead filled pillows, air filled pillows and feather or stuffing filled pillows.

These pillows come in various forms, but generally fall into one of three categories: C-shaped, O-shaped, or L shaped.

The pillows currently on the market are generally aesthetically unpleasant and have further drawbacks. For example, the U-shaped pillows generally do not support a user's head at the front below the chin, or at the sides, which causes the chin to fall forward and the neck to lie at an awkward angle, the O-shaped pillows do not cater for a wide enough range of different neck sizes the air filled pillows can be difficult to inflate and to plug shut and the stuffed pillows are so poor they don't even provide any support. The bead-filled pillows are better, as they can be quite firm, but also lack support in the upright position at the front of the neck. Furthermore, the conventional neck pillows can move in use, particularly away from the desired area of contact with the user, to be less supportive.

Summary of the Invention

According to a first aspect of the present invention there is provided a support structure for at least partially supporting a user's head, the support structure comprising:

a frame having a head engaging portion and a shoulder engaging portion, the shoulder engaging portion adapted to spread the load of the user's head over a user's shoulder, the frame being shaped to the contour of the user's body from the head engaging portion to the shoulder engaging portion.

In at least one embodiment of the present invention, a support structure having a frame which follows the contours of the user's body, provides a support structure which is unobtrusive and can be concealed by a scarf, for example.

The frame may be of substantially constant thickness.

The frame may have first surface and a second surface.

The first surface may be substantially convex.

The second surface may be substantially concave.

The first surface may, directly or indirectly, be a user engaging surface.

The head engaging portion and the shoulder engaging portion may define the first surface.

The first surface and the second surface may be substantially parallel.

The frame may define a continuous surface.

The frame may be a sheet.

The frame may be a flexible sheet.

The frame may be resilient.

The head engaging portion and the shoulder engaging portion may be hingedly connected. Such an arrangement permits flat packing of the product.

The head engaging portion may be substantially flat

Alternatively or additionally, the head engaging portion may comprise a first limb and a second limb.

The first head engaging portion limb and the second head engaging portion limb may be connected by a head engaging portion connecting member.

The head engaging portion connecting member may connect the limb at a location distal from an end of each head engaging portion limb. Such an arrangement permits the limbs to extend away from the connecting member making the device comfortable for users of different neck lengths.

The shoulder engaging portion may comprise a first shoulder engaging portion limb and a second shoulder engaging portion limb, the first and second shoulder engaging portion limbs extending from the head engaging portion.

The first shoulder engaging portion limb and the second shoulder engaging portion limb may be connected by a shoulder engaging portion connecting member.

The shoulder engaging portion first and second limbs may be adapted to straddle a user shoulder. In this embodiment, one shoulder engaging portion limb extends, in use, down the front of a user's shoulder and the other shoulder engaging portion limb extends down the back of the user's shoulder.

The shoulder engaging portion connecting member may connect the limb at a location distal from an end of each shoulder engaging portion limb. Such an arrangement permits the limbs to extend away from the connecting member making the device comfortable for users of different neck lengths.

Where there is a head engaging portion first limb and a head engaging portion second limb, the support structure may further comprise a head engaging portion bridging means connecting the first head engaging portion limb to the second head engaging portion limb. The head engaging portion bridging means is adapted to span the gap between the head engaging portion limbs.

Where there is a shoulder engaging portion first limb and a shoulder engaging portion second limb, the support structure may further comprise a shoulder engaging portion bridging means connecting an end of the first shoulder engaging portion limb to an end of the second shoulder engaging portion limb, the first and second shoulder engaging portion limb ends being distal from the head engaging portion. In this embodiment, the bridging means extends over the shoulder, in use, to distribute the weight of the user's head over a greater area. The shoulder engaging portion bridging means is adapted to span the gap between the shoulder engaging portion limbs.

The support structure may comprise an anchoring means adapted to secure the support structure, in use, to a user.

The anchoring means may be adapted to secure the support structure, in use, to a user's neck. The anchoring means may be adapted to press the support structure against a user's neck.

The anchoring means may define a support structure receiving portion.

The support structure receiving portion may be a pocket.

The anchoring means may comprise a fabric material.

The anchoring means may comprise an elongate length of fabric material. The fabric material may be a scarf.

The support structure receiving portion may be located at a first end of the fixing means.

The head engaging portion bridging means and the shoulder engaging portion bridging means may be defined by the anchoring means.

The head engaging portion bridging means and the shoulder engaging portion bridging means may be defined by the support structure receiving portion.

The bridging means may be a web.

The frame may be adapted, in use, to compress under the weight of a user's head.

Where there is a head engaging portion connecting member and a shoulder engaging connecting member, the connecting members may engage as the frame compresses.

Where the connecting members engage, the connecting members may resist further compression of the frame.

According to a second aspect of the present invention there is provided a method of supporting a user's head, the method comprising the steps of:

engaging a frame having a head engaging portion and a shoulder engaging portion to a user such that the head engaging portion engages the person's head and the shoulder engaging portion engages this user's shoulder and the frame follows the contour of the user's body from the head engaging portion to the shoulder engaging portion and the frame shoulder engaging portion spreads the load of the user's head over the user's shoulder.

Brief Description of the Drawings

An embodiment of the present invention will now be described with reference to the accompanying Figures in which;

Figure 1 is a perspective view of a support structure for at least partially supporting a user's head, according to a first embodiment of the present invention;

Figure 2 is a perspective view of part of the support structure frame of Figure 1;

Figure 3 is a top view of the support structure frame of Figure 1;

Figure 4 is a side view of the support structure frame of Figure 1;

Figure 5 is an end view of the support structure frame of Figure 1;

Figure 6, comprising Figures 6A to 6D, is a sequential series of views showing support structure of Figure 1 being used by a user; and

Figure 7 is a close-up of the support structure frame of Figure 6B.

Detailed Description of the Drawings

Referring firstly to Figure 1, a perspective view of a support structure, generally indicated by reference numeral 10 for at least partially supporting a user's head (not shown) according to a first embodiment of the present invention.

The support structure 10 comprises a frame 12 and an anchoring means 14 in the form of a scarf 16. The frame 12 is contained within a pocket 18 located at a first end 20 of the scarf 16.

The frame 12 will now be described in more detail with reference to Figures 2, 3, 4 and 5, perspective, top, side and then views of the support structure frame 12 of Figure 1.

The frame 12 comprises a single piece of resilient polymeric material and defines a head engaging portion 30 and a shoulder engaging portion 40. As will be shown, the shoulder engaging portion 40 is adapted to spread the load of the user's

head over a user's shoulder. The frame 12 is shaped to the contour of the user's body from the head engaging portion 30 the shoulder engaging portion 40.

The head engaging portion 30 comprises a first head engaging limb 32 and a second head engaging limb 34, the first and second head engaging limbs 32, 34, being connected by a head engaging portion connecting member 36.

The shoulder engaging portion 40 comprises a first shoulder engaging limb 42 and a second shoulder engaging limb 44, the first and second shoulder engaging limbs 42, 44 being connected by a shoulder engaging portion connecting member 46.

The head engaging portion limbs 32, 34 have respective head engaging surfaces 52, 54 which are angled towards each other to cup, in use, a part of user's jaw. Similarly, the shoulder engaging portion limbs 42, 44 have respective shoulder engaging surfaces 62, 64 which also angled towards each other to cup between them two portions of the convex surface of a user's shoulder when in use.

It will be noted, the limbs 32, 34, 42, 44 are paddle shaped in that they are wider at their free ends, 56, 58, 66, 68 than at their connecting ends 57, 59, 67, 69 where they join their respective connecting members 36, 46

In the embodiment shown in Figure 2 – Figure 5, the frame 12 is in an uncompressed configuration. That is, the configuration shown on these Figures is a “not in use” configuration, the frame 12 being adapted to be compressed under the weight of the user's head. In this uncompressed configuration, the head engaging portion connecting member 36 and the shoulder engaging portion connecting member 46 are in contact at their respective midpoint's 38, 48. This will be discussed further in due course

In use, the frame 12 is fitted into the pocket 18 of the scarf 16. Referring to Figure 1, the sides of the pocket 80, 82 maintain a substantially constant spacing between the head engaging portion limbs 32, 34 and a substantially constant spacing between the shoulder engaging portion limbs 42, 44. The scarf surface 84 providing a bridging means 86 to provide a comfortable contact surface for the user.

Operation of the support structure 10 will now be described with reference to Figure 6 comprising Figures 6A – 6D, a sequential series showing fitting of the support structure 10 to a user 100.

The user 100 places the first end of the scarf 20 containing the frame 12 inside the scarf pocket 18 against their neck 102 such that the frame head engaging portion 30 rests against the underside of the user's jaw 104 and the frame shoulder engaging portion 40 lies across the user's shoulder 106.

The user 100 takes a scarf second end 108 and passes it around their neck 102, until the scarf encircles their neck 102.

The scarf first and second ends 20, 108 are provided with hook and loop fastener portions 110, 112 which are brought together to secure the support structure to the user 100, thereby providing structure 10 adapted to at least partially support the user's head 114 permitting them to sleep comfortably in an upright position.

Referring to Figure 7, a close-up of the frame 10 shown in Figure 6B in which the frame 12 is partially compressed, it will be noted that the head engaging portion connecting member 36 and a shoulder engaging portion connecting member 46 for much of the length of the respective portions. This provides extra rigidity to the support structure 10, allowing for an initial "give" when the user 100 puts the weight of their head 114 on the support structure 10 by providing more resistance as the

user applied weight increases and the size of the contact area between the connecting members 36, 46 increases.

Various modifications and improvements may be made to the above described embodiments without departing from the scope of the present invention. For example, the bridging means may include an elasticated strap between the free ends of the limbs.

CLAIMS

1 A support structure for at least partially supporting a user's head, the support structure comprising:

a frame having a head engaging portion and a shoulder engaging portion, the shoulder engaging portion adapted to spread the load of the user's head over a user's shoulder, the frame being shaped to the contour of the user's body from the head engaging portion to the shoulder engaging portion.

2 The support structure of claim 1, wherein the frame is substantially constant thickness.

3 The support structure of claim 1 or claim 2, wherein the frame has a first surface and a second surface.

4 The support structure of claim 3, wherein the first surface is substantially convex.

5 The support structure of claim 3 or claim 4, wherein the second surface is substantially concave.

6 The support structure of any claims 3 to 5, wherein the first surface is, directly or indirectly, a user engaging surface.

7 The support structure of any claims 3 to 6, wherein the head engaging portion and the shoulder engaging portion define the first surface.

- 8 The support structure of any claims 3 to 7, wherein first surface and the second surface are substantially parallel.
- 9 The support structure of any preceding claim, wherein the frame defines a continuous surface.
- 10 The support structure of any preceding claim, wherein the frame is a sheet.
- 11 The support structure of any preceding claim, wherein the frame is a flexible sheet.
- 12 The support structure of any preceding claim, wherein the frame is resilient.
- 13 The support structure of any preceding claim, wherein the head engaging portion is substantially flat
- 14 The support structure of any preceding claim, wherein the head engaging portion comprises a first limb and a second limb.
- 15 The support structure of claim 14, wherein the first head engaging portion limb and the second head engaging portion limb are connected by a head engaging portion connecting member.

16 The support structure of any preceding claim , wherein the shoulder engaging portion comprises a first shoulder engaging portion limb and a second shoulder engaging portion limb, the first and second shoulder engaging portion limbs extending from the head engaging portion.

17 The support structure of claim 16, wherein the first shoulder engaging portion limb and the second shoulder engaging portion limb are connected by a shoulder engaging portion connecting member.

18 The support structure of claim 16 or claim 17, wherein the shoulder engaging portion first and second limbs are adapted to straddle a user shoulder.

19 The support structure of any of claims 14 to 18 when dependent on claim 14, wherein there is a head engaging portion first limb and a head engaging portion second limb, the support structure further comprises a head engaging portion bridging means connecting the first head engaging portion limb to the second head engaging portion limb.

20 The support structure of any of claims 17 to 19 when dependent on claim 17, wherein there is a shoulder engaging portion first limb and a shoulder engaging portion second limb, the support structure comprises a shoulder engaging portion bridging means connecting an end of the first shoulder engaging portion limb to an end of the second shoulder engaging portion limb, the first and second shoulder engaging portion limb ends being distal from the head engaging portion.

21 The support structure of claim 20, wherein the shoulder engaging portion bridging means extends over the shoulder, in use, to distribute the weight of the user's head over a greater area.

22 The support structure of any preceding claim, wherein the support structure comprises an anchoring means adapted to secure the support structure, in use, to a user.

23 The support structure of claim 22, wherein the anchoring means is adapted to secure the support structure, in use, to a user's neck.

24 The support structure of claim 23 , wherein anchoring means is adapted to press the support structure against a user's neck.

25 The support structure of any of claims 22 to 24, wherein the anchoring means defines a support structure receiving portion.

26 The support structure of claim 25, wherein the support structure receiving portion is a pocket.

27 The support structure of any claims 22 to 26, wherein the anchoring means comprises a fabric material.

28 The support structure of claim 27, wherein the anchoring means comprises an elongate length of fabric material.

- 29 The support structure of claim 28, wherein the fabric material is a scarf.
- 30 The support structure of any of claims 25 to 29, wherein the support structure receiving portion is located at a first end of the fixing means.
- 31 The support structure of any of claims 22 to 30 dependent on claim 19, wherein the head engaging portion bridging means and the shoulder engaging portion bridging means are defined by the anchoring means.
- 32 The support structure of claim 31, wherein the head engaging portion bridging means and the shoulder engaging portion bridging means are defined by the support structure receiving portion.
- 33 The support structure of claim 31 or claim 32, wherein the bridging means is a web.
- 34 The support structure of any preceding claim, wherein the frame is adapted, in use, to compress under the weight of a user's head.
- 35 The support structure of any preceding claim dependent on claims 15 and 17, wherein there is a head engaging portion connecting member and a shoulder engaging connecting member, the connecting members may engage as the frame compresses.

36 The support structure of claim 35, wherein the connecting members engage, the connecting members resist further compression of the frame.