popularity. Such adjustable bases have been known in the hospital industry for some time, but, they are now becoming available in the domestic bedding market.

[0006] As the adjustable bed base changes shape, the mattress is bent from a substantially flat planar shape towards one that generally matches the contours of the bed base. A problem of attempting to adjust a mattress with edge support is that the edge support is designed to be rigid and is not well suited to being bent. Although this issue applies to all edge support systems, it has been identified as being particularly problematic for the aforementioned polyethylene side walls edge support systems.

OBJECT OF THE INVENTION

[0007] Embodiments of this invention seek to provide a flexible mattress which may overcome or ameliorate one or more of the disadvantages or problems described above, or which may at least provide a useful commercial alternative.

[0008] Other preferred objects of the present invention will become apparent from the following description.

SUMMARY OF INVENTION

[0009] In one form, although it need not be the only or indeed the broadest form, there is provided a mattress comprising:

a base and an upper surface; and

two side walls extending between two end walls such that the base, upper surface, side walls, and end walls define a cavity having a mattress support disposed therein that supports the upper surface above the base, the edge segments being fixed relative to each other adjacent the base and movable relative to each other adjacent the upper surface;

wherein one or more of the side walls and end walls comprises an edge support system having a plurality of overlapping edge segments.

[0010] Preferably end walls are affixed to the base. Preferably side walls are affixed to the base. Preferably the plurality of edge segments are affixed to the base. Preferably the base comprises a polyethylene plank. Preferably at least one of the end walls and side walls are made from polyethylene. Preferably the edge segments are made from a low density polyethylene foam. Preferably the edges are thermally welded to the base.

[0011] Preferably each of the edge segments comprise a side wall portion and a transverse portion. Preferably the transverse portion curves from the side wall portion. Preferably the transverse portion is substantially perpendicular to the side wall portion. Preferably the transverse portion extends into the cavity of the mattress. Preferably the transverse portion forms a trailing edge of the edge segment, and preferably a leading edge of the edge segment is tapered. Preferably the leading edge of the edge segment is resiliently flexible.

[0012] Preferably each of the edge segments comprise an anchor. Preferably the anchor is configured to anchor the edge segment to the mattress support. Preferably the anchor extends transverse to the side wall portion. Preferably the anchor extends substantially parallel to the transverse portion.

[0013] Preferably the anchor comprises a stem portion and a head portion. Preferably the stem portion is elongated. Preferably the head portion is enlarged relative to the stem portion. Preferably the head portion comprises at

least one barb. Preferably the head portion comprises two barbs. Preferably the head portion comprises two opposed barbs. Preferably the anchor is substantially arrow shaped. Preferably the head portion of the anchor is resiliently flexible.

[0014] Preferably each of the edge segments is integral. Preferably each of the edge segments is formed from a low density polyethylene foam extrusion. Preferably the transverse portion is recessed from at least one of the top and bottom of the side wall. Preferably the anchor is recessed from at least one of the top and bottom of the side wall. Preferably the transverse portion and anchor are both recessed from both the top and bottom of the side wall.

[0015] Preferably the edge segments are affixed to the base such that a leading edge of an edge segment overlaps at least a portion of the transverse portion of an adjacent edge segment Preferably adjacent edge segments are movable relative to each other along substantially the entire length of their leading and trailing edges.

[0016] Preferably the edge segments are located between corner members. Preferably the corner members comprise anchors. Preferably the anchors are the same as, or at least substantially the same as, the anchors for the edge segments. Preferably the corner members extend along a portion of one end wall and one side wall.

Claims:

1. A mattress comprising:

a base and an upper surface; and

two side walls extending between two end walls such that the base, upper surface, side walls, and end walls define a cavity having a mattress support disposed therein that supports the upper surface above the base;

wherein one or more of the side walls and end walls comprises an edge support system having a plurality of overlapping edge segments, the edge segments being fixed relative to each other adjacent the base and movable relative to each other adjacent the upper surface.

2. The mattress of claim 1, wherein the end walls and side walls are affixed to the base.

3. The mattress of claim 1, wherein the plurality of edge segments are affixed to the base.

4. The mattress of any one of the preceding claims, wherein the base comprises a polyethylene plank.

5. The mattress of any one of the preceding claims, wherein the edge segments are made from a low density polyethylene foam thermally welded to the base.

6. The mattress of any one of the preceding claims, wherein each of the edge segments comprise a side wall portion and a transverse portion that curves from the side wall portion.

7. The mattress of claim 6, wherein the transverse portion is substantially perpendicular to the side wall portion.

8. The mattress of claim 6 or 7, wherein the transverse portion extends into the cavity of the mattress.

9. The mattress of any one of claims 6 to 8, wherein the transverse portion forms a trailing edge of the edge segment and a resiliently flexible leading edge of the edge segment is tapered.

10. The mattress of any one of the preceding claims, wherein each of the edge segments comprise an anchor configured to anchor the edge segment to the mattress support.

11. The mattress of claim 10, wherein the anchor extends transverse to the side wall portion.

12. The mattress of claim 10 or 11, wherein the anchor comprises a stem portion and a head portion.

13. The mattress of claim 12, wherein the stem portion is elongated and the head portion is enlarged relative to the stem portion.

14. The mattress of claim 13, wherein the head portion comprises at least one barb.

15. The mattress of claim 14, wherein the head portion comprises two opposed barbs.

16. The mattress of any one of claims 12 to 15, wherein the head portion of the anchor is resiliently flexible.

17. The mattress of any one of the preceding claims wherein each of the edge segments is integral.

18 The mattress of claim 17, wherein each of the edge segments is formed from a low density polyethylene foam extrusion.

19. The mattress of any one of the preceding claims, wherein the edge segments are affixed to the base such that a leading edge of an edge segment overlaps at least a portion of a transverse portion of an adjacent edge segment.

20. The mattress of any one of the preceding claims, wherein adjacent edge segments are movable relative to each other along substantially the entire length of their leading and trailing edges.

21. The mattress of any one of the preceding claims, wherein the edge segments are located between corner members, wherein the corner members comprise anchors and extend along a portion of one end wall and one side wall.

22. The mattress of any one of the preceding claims wherein the base and upper surface are substantially rectangular, the side walls are substantially parallel to each other, the end walls are substantially parallel to each other, the side walls are longer than the end walls, and the side walls and end walls extend around a perimeter of the base and the upper surface.

23. The mattress of any one of the preceding claims, wherein the mattress support comprises a spring unit comprising a plurality of springs.

24. The mattress of claim 23, wherein the springs comprise helical wires biased between the base and the upper surface.