WHAT IS CLAIMED IS:

1. A method of producing headgear for a patient interface, comprising:

using a weld tool to apply high-frequency energy to a weld region defined by overlapping top and bottom headgear straps, the weld tool comprising pins that at least partially penetrate both the top and bottom headgear straps, wherein portions of the surface of the weld tool surrounding the pins are inwardly chamfered;

applying pressure to the weld region of the top and bottom headgear straps with a contact surface of the weld tool that is separate from the pins, wherein the pins conduct electrical or electromagnetic energy.

2. The method of claim 1, wherein the pins fully penetrate the top headgear strap and partially penetrate the bottom headgear strap.

3. The method of claim 1 or claim 2, wherein the pins penetrate about 20% of the depth of the bottom headgear strap.

4. The method of any one of the previous claims, wherein the surface of the weld tool that faces the weld region comprises beveled or rounded edges.

5. The method of any one of the previous claims, wherein the chamfered portions are substantially arcuate.

6. The method of claim 5, wherein the substantially arcuate chamfered portions are defined by crater-like recesses present in the surface of the weld tool.

7. The method of claim 6, wherein the curvatures of the sides of the crater-like recesses are defined by substantially circular cross-sections of the weld tool having radii x that are proportional to the average distance between pins y according to the ratio x:y = about 0.3 to about 0.4.

8. The method of any one of the previous claims, wherein the pins are arranged in a plurality of rows.

9. The method of claim 8, wherein the rows are offset such that pins are present in a honeycomb arrangement.

10. The method of any one of the previous claims, wherein the pins are arranged such that each pin is substantially equidistant from adjacent pins.

11. The method of any one of the previous claims, wherein either the top or bottom headgear straps comprises an edge section and a body section, the edge section

having a smaller width than the body section.

12. The method of claim 11, wherein the width of the edge section is in the range of about 80% to about 90% of the width of the body section.

13. The method of claim 11, wherein a substantially curved transition region lies between the body section and the edge section.

14. The method of any one of the previous claims, wherein the average distance between adjacent pins is in the range of about 1.5mm to about 2.0mm.

15. The method of any one of the previous claims, wherein the average distance between adjacent pins is in the range of about 3 to about 4 times the average width of the pins.