

WHAT IS CLAIMED IS:

1. ~~A headgear assembly for a patient interface comprising:~~
~~ear loops configured to be positioned on left and right sides of the head of a user and to surround the ears;~~
~~crown straps attached to the ear loops and extending upwards from the ear loops, the crown straps overlapping over a crown of the head of the user;~~
~~one or more fasteners connecting the crown straps;~~
~~top straps attached to the ear loops, extending forwardly towards the user interface, and connected to the user interface; and~~
~~bottom straps positioned below the top straps, attached to the ear loops, extending horizontally with respect to the user toward the user interface, and connected to the user interface, wherein the top straps extend at an angle relative to the bottom straps in a lengthwise direction towards the bottom straps.~~
2. ~~The headgear assembly of claim 1, wherein the angle is between 0 degrees and 25 degrees.~~
3. ~~The headgear assembly of claim 1 or 2, wherein the angle is 12 to 15 degrees.~~
4. ~~The headgear assembly of any one of claims 1-3, wherein an angle between a lengthwise direction of the crown strap and a lengthwise direction of the top straps is within 100 to 150 degrees.~~
5. ~~The headgear assembly of claim 4, wherein the angle between the lengthwise direction of the crown strap and the lengthwise direction of the top straps is 115 to 118 degrees.~~
6. ~~The headgear assembly of any one of claims 1-5 wherein a segment of each ear loop connecting the crown strap to the top strap is tangent to the crown strap.~~
7. ~~The headgear assembly of any one of claims 1-6, wherein the fasteners are spaced apart an increment distance along a length of the crown straps.~~
8. ~~The headgear assembly of claim 7, wherein the increment distance is between 22 and 24mm.~~
9. ~~The headgear assembly of any one of claims 1-8, wherein the fasteners further comprising male elements positioned on one crown strap and female elements~~

positioned on an other crown strap, the male elements are connected to the female elements to fasten the crown straps together.

10. The headgear assembly of any one of claims 1-9, the female elements further comprising through holes that extend through the crown strap, the male elements further comprising protrusions that protrude from the crown strap, wherein the through holes and protrusions have corresponding shapes.
11. The headgear assembly of any one of claims 1-10, wherein at least the ear loops and crown straps include a rigid frame, the rigid frame providing structure and support to the ear loops and crown straps.
12. The headgear assembly of claim 11, wherein the ear loops and crown straps include overlay layers sandwiching the rigid frame such that the rigid frame is disposed between two overlay layers, the overlay layers providing a comfortable user contacting side.
13. The headgear assembly of claim 11 or 12, wherein the overlay layers have at least one of a lower modulus of elasticity, a lower flexural modulus, or a greater softness than the rigid frame.
14. The headgear assembly of any one of claims 11-13, wherein the overlay layers are formed from a fabric material.
15. The headgear assembly of any one of claims 11-14, wherein the rigid frame includes a top and bottom strap connecting segment that is a portion of the rigid frame that connects the top and bottom straps, wherein the top and bottom strap connecting segment is positioned along the cheekbones of the user.
16. The headgear assembly of any one of claims 11-15, wherein the rigid frame includes segments that extend from positions adjacent the ear and/or cheek and are connected to the crown strap to transmit loads to the crown strap.
17. The headgear assembly of any one of claims 1-16, the headgear further comprising a back panel that is connected to the ear loops, the back panel extending along a rear of the user's head.

~~18. The headgear assembly of claim 17, wherein the back panel includes a contoured section of the bottom edge such that the back panel rests above the neck and bears on the base of the skull.~~

~~19. The headgear assembly of claim 17 or 18, wherein the back panel is formed from a soft and stretchable material.~~

~~20.1.~~ 20.1. A patient interface comprising:

an interface frame;

a cushion module removably connected to the interface frame, the cushion module comprising a shell and a soft cushion that is connected to the shell, the cushion module having an under nose sealing portion and an oral sealing portion; and

a headgear assembly removably connected to the interface frame, the headgear assembly comprising:

a headgear frame, the headgear frame comprising a plurality of segments that extend around the ears, along the cheekbone and along the crown; ~~and~~

an overlay, the overlay having two layers, the headgear frame being disposed between the two layers of the overlay, and the overlay being formed from a softer material than the headgear frame, and

wherein at least the overlay on the segments of the headgear frame that extend around the ears and along the crown include a plurality of air apertures.

~~21.2.~~ 21.2. The patient interface of claim ~~20~~1, the headgear assembly further comprising ear loops that extend around the ear.

~~22.3.~~ 22.3. The patient interface of claim ~~20~~1 or ~~21~~2, the headgear assembly further comprising crown straps that extend along the top of the user's head and are removably connectable to each other.

~~23.4.~~ 23.4. The patient interface of any one of claims ~~20~~1-22~~3~~4, the headgear assembly further comprising fasteners that connect the crown straps together.

~~24.5.~~ 24.5. The patient interface of any one of claims ~~21~~1-23~~4~~5, wherein a segment of the ear loops connecting the crown strap to the top strap is tangent to the crown strap.

~~25.6.~~ The patient interface of claim ~~234~~ or ~~245~~, wherein the fasteners are spaced apart at an increment distance along a length of the crown straps.

~~26.7.~~ The patient interface of claim ~~256~~, wherein the increment distance is between 22 and 24mm.

~~27.8.~~ The patient interface of any one of claims ~~234-267~~, wherein the fasteners further include male elements positioned on one crown strap and female elements positioned on an other crown strap, the male elements are connected to the female elements to fasten the crown straps together.

~~28.9.~~ The patient interface of claim ~~278~~, the female elements further comprising through-holes that extend through the crown strap, the male elements further comprising protrusions that protrude from the crown strap, wherein the through-holes and protrusions have corresponding shapes.

~~29.10.~~ The patient interface of any one of claims ~~201-289~~, the headgear assembly further comprising:

a back panel that is connected to the ear loops, the back panel extending along a rear of the user's head.

~~30.11.~~ The patient interface of claim ~~2910~~, wherein the back panel includes a contoured section of the bottom edge such that the back panel rests above the neck and bears on the base of the skull.

~~31.12.~~ The patient interface of claim ~~2910~~ or ~~3011~~, wherein the back panel is formed from a soft and stretchable material.

~~32.13.~~ The patient interface of any one of claims ~~201-3112~~, the patient interface further comprising:

one or more clips to removably couple the headgear assembly to the interface frame, the clips comprising a female fixation element configured to engage with a male fixation element on the mask frame.

~~33.14.~~ The patient interface of claim ~~3213~~, wherein the female fixation element is a cut-out portion in the body of the clip.

~~34~~.15. The patient interface of claim ~~32~~13 or ~~33~~14, wherein the interface frame includes a ridge portion that extends upwardly from the interface frame and is received by the female fixation element.

~~35~~.16. The patient interface of any one of claims ~~32~~13-~~34~~15, wherein the clip includes one or more magnetic elements that are spaced apart from each other and are aligned along a vertical axis with respect to the user.

~~36~~.17. The patient interface of any one of claims ~~32~~13-~~35~~16, wherein the interface frame includes corresponding magnetic elements to interface with the magnetic elements of the clip to retain the clip on the interface frame.