

WHAT IS CLAIMED IS:

1. ~~A mask frame for a patient mask for delivering breathing gases to a patient, the mask frame comprising:
a central region comprising a conduit connection aperture configured to be connected to a breathing gas delivery conduit, a notional central vertical plane extending through the centre of the conduit connection aperture; and
first and second lateral arms each extending outwardly from the central region away from the central vertical plane;
each lateral arm having a length and terminating in a distal end remote from the central region, each lateral arm comprising a top and bottom margin; wherein
each lateral arm twists along its length such that the bottom margin at the end of each lateral arm is positioned further away from the notional central vertical plane than the top margin at the end of each lateral arm.~~
2. ~~The mask frame of claim 1, wherein the lateral arms extend:
laterally outwardly from the central region of the frame;
rearwardly, towards the patients ears; and
upwardly, so that the lateral arms are angled upwards such that they extend along a direction extending from the ends of the lateral arms to an area between the user's temples and ears.~~
3. ~~The mask frame of claim 2 wherein the lateral arms extend upwardly along a vector passing from below the nose to a point between the temple at the top of the ear.~~
4. ~~The mask frame of any one of claims 1 to 3 wherein each lateral arm comprises a planar strip, the end of each strip defining top and bottom corners at the top and bottom margins respectively, wherein the side arms twist along their length such that the bottom corner of the ends of the lateral arms are positioned further away from the central region of the frame than the top corners.~~

- ~~5. The mask frame of claim 4 wherein each lateral arm is tapered along its length, that is, the distance between the top and bottom margins reduces along at least part of the length of each lateral arm.~~
- ~~6. The mask frame of any one of the preceding claims wherein the ends of the lateral arms are positioned below a notional horizontal mid plane that passes through the centre of the elbow connection aperture.~~
- ~~7. The mask frame of any one of the preceding claims wherein the end of each arm comprises a headgear connector configured to connect the frame to headgear.~~
- ~~8. The mask frame of claim wherein the headgear connector comprise a loop and a post configured to provide a connection point for a hook of a headgear clip attached to headgear.~~
- ~~9. The mask frame of claim 7 or claim 8 wherein the headgear connector comprises a rotation limiting formation configured to limit relative rotation between headgear connected to the headgear connector, and the mask frame.~~
- ~~10. The mask frame of claim 9 wherein the rotation limiting formation comprises an end stop against which the headgear abuts after a predetermined amount of relative rotation between the mask frame and headgear.~~

441. A mask assembly (1) comprising a mask frame (5) and a headgear (13) configured to be connected to the mask frame (5), at least one of the mask frame (5) and headgear (13) comprising a connector comprising a post (101), the post (101) is orientated generally vertically in normal use of the mask (1) and headgear (13), and the side straps (171) therefore rotate laterally about a generally vertical pivot axis, the other of the mask frame (5) and headgear (13) comprising a connector comprising a hook (15a) configured to receive the post (101) using a snap-fit type connection to connect the headgear (13) to the mask frame (5) such that the hook (15a) can rotate about the post (101) towards and away from the mask frame (5), the mask assembly

(1) further comprising at least one rotation limiting formation configured to limit the extent of relative rotation between the hook (15a) and post (101).

~~122.~~ The mask assembly (1) of claim ~~11~~1 wherein the rotation limiting formation comprises an end stop (225a, 225b, 227) on one of the mask frame (5) and headgear (13) against which the other of the mask frame (5) and headgear (13) abuts after a predetermined amount of relative rotation between the mask frame (5) and headgear (13).

~~133.~~ The mask assembly (1) of claim ~~12~~2 comprising two end stops (225a, 225b, 227), one on the mask frame (5), the other on the headgear (13), the end stops (225a, 225b, 227) being configured to abut after a predetermined amount of relative rotation between the mask frame (5) and headgear (13).

~~144.~~ The mask assembly (1) of claim ~~13~~3 wherein one end stop (225a, 225b, 227) is provided on the hook (15a), and the other end stop (225a, 225b, 227) is provided on the post (101).

~~155.~~ The mask assembly (1) of claim ~~14~~4 wherein at least one of the hook (15a) and post (101) comprises two spaced apart end stops (225a, 225b, 227), relative movement between the hook (15a) and post (101) being limited by the distance between the two spaced apart end stops (225a, 225b, 227).

~~166.~~ The mask assembly (1) of claim ~~14~~5 wherein one of the end stops (225a, 225b, 227) comprises a protrusion (227) projecting from one of the hook (15a) and post (101), the other of the hook (15a) and (101) post comprising a groove or recess (225) having opposed ends (225a, 225b), the opposed ends (225a, 225b) forming the two spaced part apart end stops, the protrusion (227) being received in the groove or recess (225) when the headgear (13) is connected to the mask frame (5) and being configured such that the protrusion (227) moves within the groove or recess (225), between the opposed ends (225a, 225b).

1477. The mask assembly (1) of claim 14-6 wherein the groove or recess (225) is provided on the post (101), the protrusion (227) being provided on the hook (15a).

8. The mask assembly (1) of any one of the preceding claims, wherein the mask frame (5) comprises:

a central region comprising a conduit connection aperture (77) configured to be connected to a breathing gas delivery conduit (117), a notional central vertical plane (v) extending through the centre of the conduit connection aperture (77); and

first and second lateral arms (97) each extending outwardly from the central region away from the central vertical plane (v);

each lateral arm (97) having a length and terminating in a distal end remote from the central region, each lateral arm comprising a top and bottom margin (93, 95); wherein

each lateral arm twists along its length such that the bottom margin (95) at the end of each lateral arm (97) is positioned further away from the notional central vertical plane than the top margin (93) at the end of each lateral arm (97).

9. The mask assembly (1) of claim 8, wherein the lateral arms (97) extend:

laterally outwardly from the central region of the frame;

rearwardly, towards the patient's ears; and

upwardly, so that the lateral arms (97) are angled upwards such that they extend along a direction extending from the ends of the lateral arms (97) to an area between the user's temples and ears.

10. The mask assembly (1) of claim 9, wherein the lateral arms (97) extend upwardly along a vector passing from below the nose to a point between the temple at the top of the ear.

11. The mask assembly (1) of any one of claims 8 to 10, wherein each lateral arm (97) comprises a planar strip, the end of each strip defining top and bottom corners at the top and bottom margins respectively, wherein the lateral arms (97) twist along their

length such that the bottom corner of the ends of the lateral arms (97) are positioned further away from the central region of the frame than the top corners.

12. The mask assembly (1) of claim 11, wherein each lateral arm (97) is tapered along its length, that is, the distance between the top and bottom margins reduces along at least part of the length of each lateral arm (97).

13. The mask assembly (1) of any one of claims 8 to 12, wherein the ends of the lateral arms (97) are positioned below a notional horizontal mid plane (x) that passes through the centre of the conduit connection aperture (77).

14. The mask assembly (1) of any one of claims 8 to 13, wherein the end of each lateral arm (97) comprises the headgear connector.