

CLAIMS

1. A patient interface for delivering a supply of gases to a patient, comprising:
a gas supply manifold for receiving and directing to an outlet or outlets to a
5 patient a gas supply, and
a pair of elongate side arms extending from opposite sides of the manifold
to contact a user's face in use to aid in stabilising the interface on the user's face,
each of said side arms comprising a part twisted portion, such that a cross-
10 section shape orthogonally through the side arm is part twisted anti-clockwise or
clockwise at a part of the side arm closer to an outer end relative to a part of the
side arm closer to the manifold, the twist being when considered from a top or
bottom view of the interface and said respective side arm(s).
2. The patient interface of claim 1, wherein each of said side arms comprise a
curve or bend upwardly along their length.
- 15 3. The patient interface of claim 2, wherein each side arm has an inner first
portion and an outer second portion which extends at an angle upwardly relative to
the inner first portion.
4. The patient interface of claim 3, wherein the inner first portion and outer
second portion are joined by an intermediate curved portion.
- 20 5. The patient interface of claims 3 or 4, wherein at least a part of the outer
second portion extends at an angle of between 20 and 70 degrees to the inner first
portion.
6. The patient interface of any one of claims 2 to 5, wherein the side arms are
shaped to engage the wearer's face below the cheek bones.
- 25 7. The patient interface of claim 1 or 2, wherein each of said side arms having
an inner first portion extending laterally and rearwardly from the manifold at a first
angle to the manifold and an outer second portion extending from the first portion
and rearwardly at a relatively shallower angle to the manifold or a relatively deeper
angle relative to the manifold.

8. The patient interface of any preceding claim, wherein the cross-section shape orthogonally through the side arm is part twisted anti-clockwise or clockwise up to about 45 degrees, or between about 2 and about 20 degrees.

5 9. The patient interface of claim 8, wherein a major part or all of the part twisted shape is in said second outer portion of each side arm.

10. The patient interface of any preceding claim, wherein a cross-section area of each side arm reduces along the length of the side arm.

10 11. The patient interface of any preceding claim, wherein a distal end of each side arm comprises a formation configured to releasably couple with a complementary connector of a headgear.

12. The patient interface of any preceding claim, wherein the interface outlet or outlets comprise a nasal cannula including a face mount part comprising at least one nasal prong integrally moulded with or removably attached to said face mount part.

15 13. The patient interface of claim 12, wherein the at least one nasal prong is configured not to seal about the patient's nares in use.

14. The patient interface of claim 12 or claim 13, wherein a gases flow manifold part is insertable into a body of the face mount part from either one of two opposing horizontal directions.

20 15. The patient interface of claim 14, wherein a position or location of the gases flow manifold part is reversible with respect to the body of the face mount part.

16. The patient interface of claim 14 or claim 15, wherein the gases flow manifold part is receivable by a gases chamber of the patient interface via a push-fit type configuration.

25 17. The patient interface of any one of claims 14 to 16, wherein the gases flow manifold part is receivable by a gases chamber of the patient interface from either, or both, of a left-side or a right-side of said patient interface, and/or

wherein the gases flow manifold part is connectable with a gases chamber of the patient interface so as to orient a gas supply conduit to a left-side or a right-side of a user of said patient interface.

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18. The patient interface of any preceding claim, comprising a clip for retention of a breathing tube to the patient interface.

19. The patient interface of claim 18, wherein the clip is configured to engage a mounting portion of the patient interface, the mounting portion positioned on a side arm of the pair of elongate side arms of the patient interface, and/or

the patient interface comprising mounting portions positioned on each side arm, the mounting portions positioned at the same location on each side arm such that the clip is connectable to a side arm to retain the tube in the same location on each respective side arm.

20. The patient interface of any one of claims 12 to 19, wherein the face mount part is shaped to generally follow the contours of a patient's face around the upper lip area.

21. The patient interface of any one of claims 12 to 20, wherein the face mount part is moulded or pre-formed to be able to conform to and/or is pliable to adapt, accommodate and/or correspond with the contours of the patient's face, in the region of the face where the cannula is to be located.

22. The patient interface of any one of claims 12 to 21, wherein the side arms extend laterally from opposite sides of the face mount part.

23. The patient interface of any preceding claim, wherein the cross-section shape of the side arms changes orientation through a longitudinal path of travel being positioned upon and extending along a rear surface of the patient interface, the longitudinal path of travel being located substantially as a mid-point of the height of the rear surface that contacts the user's face in use.

1. A component comprising

— a body for receiving and to at least partially surround a perimeter of at least one tube and/or at least one cable, optionally such as in a medical breathing circuit, and

— an attachment for removeably engaging a mounting portion of a patient interface, the attachment comprising of at least one arm or at least one lug that is arranged to engage a mounting portion on a patient interface.

2. ~~———— A component of claim 1, wherein the body is movable along a length of the at least one tube and/or the at least one cable, is fixed relative to the at least one tube and/or the at least one cable, and/or is rotatable about the periphery of the at least one tube and/or the at least one cable.~~

5 3. ~~———— The component of claim 1 or 2, wherein the body comprises an annular, substantially annular, square, substantially square, or rectilinear portion that is arranged to at least partially surround or to surround a perimeter of the at least one tube and/or the at least one cable.~~

10 4. ~~———— The component of any one of claims 1 to 3, wherein the body is pivotably, rotatably, or removably connected to the attachment, or any combination of any two or more thereof.~~

15 5. ~~———— The component of any one of claims 1 to 4, wherein the attachment comprises two arms and one arm is shaped, or both arms are shaped to engage a corresponding projection on the mounting portion, optionally with a snap engagement.~~

6. ~~———— The component of claim 5, wherein the arm or arms comprise an angled or lug portion shaped to engage a corresponding projection on the mounting portion, optionally with a snap engagement.~~

20 7. ~~———— The component of claim 5, wherein the attachment comprises two arms, each arm extending from the same point or substantially adjacent points on the body, each arm extending from the body in a direction toward the other arm, and each arm comprising a projection or lug that extends substantially outwardly or away from the other arm.~~

25 8. ~~———— The component of any one of claims 1 to 7, wherein the mounting portion comprises one or more slots or recesses or apertures as a female part of the mounting portion for receiving of an engagement by the attachment~~

9. ~~———— The component of any one of claims 1 to 8, wherein the mounting portion is integral with a patient interface.~~

30 10. ~~———— The component of any one of claims 1 to 9, wherein the attachment is arranged to undergo a readily tactile movement or emit a readily tactile vibration when the attachment engages the mounting portion, optionally with a snap engagement.~~

- ~~11. The patient interface, such as for use in a medical breathing circuit, the patient interface comprising a mounting portion, integral with or removably attached to the patient interface, and a component of any one of claims 1 to 10 removably engaged to the mounting portion.~~
- 5 ~~12. A connector comprising:~~
- ~~—— a first connector part;~~
- ~~—— a second connector part;~~
- ~~—— a detent for securing the first connector part and the second connector part together;~~
- 10 ~~—— a slide moveable relative to the first connector part and/or the second connector part between: ——~~
- ~~—— a secured position in which the detent is substantially inhibited from moving and releasing the first connector part from the second connector part; and~~
- 15 ~~—— a free position in which the detent is able to move to release the first connector part from the second connector part.~~
- ~~13. The connector of claim 12, further comprising a biasing means for urging the slide towards the secured position.~~
- ~~14. The connector of claim 13, wherein the biasing means comprises a pair of resilient legs.~~
- 20 ~~15. The connector of claim 14, wherein the legs:~~
- ~~—— a) move away from each other as the slide moves towards the free position, and~~
- ~~—— b) towards each other as the slide moves towards the free position.~~
- 25 ~~16. The connector of any one of claims 12 to 15, wherein the detent comprises a pair of resilient arms, the pair of resilient arms spaced apart and biased towards each other, and biased towards engagement with the first connector part, and~~

~~wherein the or each resilient arm comprises a protrusion for engagement with a complementary notch of the first connector part.~~

5 ~~17. — The connector of any one of claims 12 to 16, wherein the slide comprises a protrusion for engagement with the detent for substantially inhibiting movement and release of the first connector part from the second connector part.~~

~~18. — The connector of any one of claims 12 to 17, wherein the slide comprises a stop for locating the slide and second connector part in the secured configuration.~~

~~19. — The connector of any one of claims 12 to 18, wherein the first connector part comprises a plurality of notches.~~

10 ~~20. — The connector of any one of claims 12 to 19, wherein the second connector part comprises a location feature for locating the biasing means and a guide feature for guiding the first connector part and has the slide.~~

~~21. — The connector of any one of claims 12 to 20, wherein the second connector part comprises a carrier for carrying the detent and/or biasing means.~~

15 ~~22. — The connector of claim 21, wherein the carrier is formed with a slot and a headstrap of a headgear has an opening, the slot and opening being arranged for receiving the first connector part.~~

20 ~~23. — The connector of any one of claims 12 to 22, wherein the first connector part is located on a patient interface, and attached or attachable to the second connector part is a headgear or a part of a headgear or system for securing the patient interface in place about a user's head.~~

~~24. — A patient interface comprising:~~

25 ~~— a frame section adapted to be positioned on the face of a user, the frame section comprising a gases chamber adapted to channel gases to the user and a nasal delivery element extending from the gases chamber adapted to be located in a nare of the user; and~~

~~a manifold rotatably secured to the frame section, the manifold being configured to rotate relative to the frame section, the manifold comprising an axle~~

~~structure about which rotational motion between the manifold and frame section can occur.~~

25. ~~_____ The patient interface of claim 24, wherein the manifold is rotatably secured to the frame section in such a way that the range of rotary motion between the manifold and the frame section is limited wherein the frame section comprises a stop that limits the range of rotary motion.~~

26. ~~_____ The patient interface of claim 24 or 25, wherein the interface further comprises a retention mechanism, the retention mechanism being disposed on the frame section, the retention mechanism configured to retain the manifold in an operational position such that a pneumatic seal is created between the manifold and the gases chamber.~~

27. ~~_____ The patient interface of claim 26, wherein the retention mechanism is a post extending outwardly from the frame section, the post being configured to retain the manifold between the frame section and the post when the manifold is in the operational position.~~

28. ~~_____ The patient interface of claim 26 or 27, wherein the retention mechanism comprises a first retention feature disposed on the manifold and a second retention feature disposed on the frame section.~~

29. ~~_____ The patient interface of any one of claims 24 to 28, wherein the patient interface comprises a release mechanism, the release mechanism configured to release the manifold from an operational position such that the manifold can rotate relative to the frame section.~~

30. ~~_____ The patient interface of claim 29, wherein the release mechanism comprises a button, the button disposed on the manifold, the button comprising a boss portion that is configured to engage with and move within a substantial portion of the track as the manifold rotates.~~

31. ~~_____ The patient interface of claim 29 or 30, wherein the release mechanism comprises a release body, the release body moveable within a recess within the manifold, the release body being moveable from an unbiased position to a biased position, the release body being in the unbiased position when the manifold is in the operational position.~~

32. ~~_____ The patient interface of claim 31, wherein the release body comprises one or side arms, the recess comprising one or more end regions shaped to correspond to the one or more side arms, the side arms being configured to move into the end regions to release the boss portion from the detention regions and allow the manifold to rotate.~~

33. ~~_____ The patient interface of any one of claims 24 to 32, wherein said manifold is a manifold assembly operatively securable to the frame section, the manifold assembly having a manifold and a manifold inlet, the manifold inlet having a tapered lumen in which an end proximal to the manifold has an area greater than an area of an end of the lumen distal the manifold.~~

34. ~~_____ The patient interface of claim 33, wherein the manifold assembly comprises a first component and a second component engageable with the first component such that:~~

~~_____ the first component forms at least part of the manifold, at least part of the manifold inlet, or at least part of the manifold and at least part of the manifold inlet, _____~~

~~_____ and the second component forms at least part of the manifold, at least part of the manifold inlet, or at least part of the manifold and at least part of the manifold inlet.~~

35. ~~_____ The patient interface of claim 34, wherein the first component has a manifold inlet portion, and the second component is a or has a manifold inlet portion, the manifold inlet portion of the first component and the manifold inlet portion of the second component being engageable to form the manifold inlet.~~

36. ~~_____ The patient interface of claims 33 or 34, wherein the first component comprises at least one location feature and the second component comprises at least one complementary location feature.~~

37. ~~_____ The patient interface of any one of claims 34 to 36, wherein the at least one location feature of the first component comprises a protrusion and the at least one location feature of the second component comprises a complementary recess or aperture.~~

38. ——— The patient interface of any one of claims 34 to 37, wherein the first component has an internally threaded portion corresponding to an externally threaded portion of a conduit or tube.

39. ——— The patient interface of any one of claims 34 to 38, wherein the second component has an internally threaded portion corresponding to an externally threaded portion of a conduit or tube.

40. ——— The patient interface of any one of claims 34 to 39, wherein the manifold assembly further comprises of a fastening component in the form of a collar, the collar being a substantially annular component.

41. ——— The patient interface of claim 40, wherein the collar has a tapered internal surface for engaging with an exterior surface of the manifold inlet portion of the first component and an exterior surface of the manifold inlet portion of the second component.

42. ——— The patient interface of claim 34, wherein the first component has a manifold portion, and the second component has a manifold portion, the manifold portion of the first component and the manifold portion of the second component being engageable to form at least part of the manifold.

43. ——— A patient interface for delivering a supply of gases to a patient, comprising a gas supply manifold for receiving and directing to an outlet or outlets to a patient a gas supply, and a pair of elongate side arms extending from opposite sides of the manifold to contact a user's face in use to aid in stabilising the interface on the user's face, each of said side arms comprising a curve or bend upwardly along their length.

44. ——— The patient interface of claim 43, wherein each side arm has an inner first portion and an outer second portion which extends at an angle upwardly relative to the inner first portion.

45. ——— The patient interface of claim 44, wherein at least a part of the outer second portion extends at an angle of between 20 and 70 degrees to the inner first portion.

46. ——— The patient interface of claim 43 for delivering a supply of gases to a patient, comprising a gas supply manifold for receiving and directing to an outlet or outlets to a patient a gas supply, and a pair of elongate side arms extending from

~~opposite sides of the manifold to contact a user's face in use to aid in stabilising the interface on the user's face, each of said side arms having an inner first portion extending laterally and rearwardly from the manifold at a first angle to the manifold and an outer second portion extending from the first portion and rearwardly at a relatively shallower angle to the manifold.~~

~~47. — The patient interface of claim 46, wherein the inner first portion of each of said side arm extends at an angle to the manifold of between about 30 or about 50 and about 70 degrees and the outer second portion extends from the first portion at an angle of between about 150 and about 170 or about 180 degrees to the manifold.~~

~~48. — The patient interface of claim 46 or 47, wherein the side arms further comprise a curve or bend upwardly along their length and a part twisted portion, such that a cross-section shape orthogonally through the side arms is part twisted anti-clockwise at a part of the side arm closer to an outer end relative to a part of the side arm closer to the manifold.~~

~~49. — A patient interface of any one of claims 43 to 48, wherein a distal end of each side arm comprises a formation configured to releasably couple with a complementary connector of a headgear.~~

~~50. — A patient interface of any one of claims 43 to 49, wherein said interface comprises a headgear in the form of at least one strap, said strap in use, being splittable or bifurcatable to provide an upper strap part and a lower strap part of said headgear.~~

~~51. — A patient interface of any one of claims 43 to 50, wherein said manifold is rotatably coupled or configured as a rotatable connection to the patient interface or a frame portion of said patient interface, such that in use a gas supply conduit in fluid connection with said manifold is orientable to a left side or a right side of a user of said patient interface.~~

~~52. — A patient interface of any one of claims 43 to 50, wherein said manifold is of a push-fit type configuration receivable by a gases chamber of said patient interface for receiving of a said gas supply and directing to said outlet or outlets, to be inserted into or removed from said gases chamber, said push-fit type configuration manifold in use being in fluid connection with a gas supply conduit~~

~~supplying of said gas supply, the push-fit type configuration manifold being receivable by said gases chamber from either, or both, of a left side or a right side of said patient interface or connected so as to orient said gas supply conduit to a left side or a right side of a user of said patient interface.~~

- 5 ~~53. ——— A patient interface of any one of claims 43 to 52, further comprising the component as claimed in any one of claims 1 to 11.~~
- ~~54. ——— A patient interface of any one of claims 43 to 53, further comprising the component as claimed in any one of claims 12 to 23.~~
- ~~55. ——— A patient interface of any one of claims 43 to 54, further comprising the~~
- 10 ~~component as claimed in any one of claims 24 to 42.~~