

typically worn for an extended period of time, a variety of concerns must be taken into consideration. For example, in providing CPAP to treat OSA, the user normally wears the mask all night long while he or she sleeps. One concern in such a situation is that the mask should be as comfortable as possible. It is also important that the mask provide a sufficient seal against a user's face without significant discomfort.

Summary of the Inventions

[0006] Accordingly, it is an object of certain embodiments of the present disclosure to provide an improved sealing member for use in a mask assembly that overcomes the shortcomings of conventional sealing members.

[0007] In some configurations, a nasal seal includes a seal body formed of a soft flexible material and having a sidewall that at least partially defines an inner cavity, the seal body comprising a sealing portion comprising a first nostril prong and a second nostril prong; a base portion defining a supply opening that allows a supply of breathing gases to be provided to the inner cavity; a bellows portion defined by the sidewall, the bellows portion being located between the sealing portion and the supply opening, wherein the bellows portion comprises an indentation that extends circumferentially around the seal body and supports both the first nostril prong and the second nostril prong, wherein the indentation extends around an entire circumference of the seal body, characterized in that the perimeter of the base portion and indentation is smaller than the perimeter of the sealing portion to provide an offset that can inhibit the base portion from contacting the user's lip in use.

[0008] In some configurations, the indentation has a curved shape in cross-section.

[0009] In some configurations, the indentation is concave and defined between a convex base portion of the seal body and a convex sealing portion of the seal body.

[0010] In such form, the convex base portion extends between the indentation and the supply opening and the convex sealing portion extending between the indentation and the first and second nostril prongs.

[0011] In some configurations, the bellows portion is configured to allow for linear compression and/or expansion of the seal body in an axial direction along an axis extending through a center of the supply opening and between the first and second nostril prongs.

Claims

1. A nasal seal (500) comprising:
 - a seal body formed of a soft flexible material and having a sidewall that at least partially defines an inner cavity, the seal body comprising:
 - a sealing portion (510) comprising a first nostril prong (120) and a second nostril prong (121);
 - a base portion (520) defining a supply opening (130) that allows a supply of breathing gases to be provided to the inner cavity;
 - a bellows portion defined by the sidewall, the bellows portion being located between the sealing portion (510) and the supply opening (130), wherein the bellows portion comprises an indentation (522) that extends circumferentially around the seal body and supports both the first nostril prong (120) and the second nostril prong (121), wherein the indentation (522) extends around an entire circumference of the seal body, characterized in that the perimeter of the base portion (520) and indentation (522) is smaller than the perimeter of the sealing portion (510) to provide an offset (523) that can inhibit the base portion (520) from contacting the user's lip in use.
2. The nasal seal of Claim 1, wherein the indentation (522) has a curved shape in cross-section.
3. The nasal seal (500) of any one of Claims 1-2, wherein the indentation (522) is concave and defined between a convex base portion (520) of the seal body and a convex sealing portion (510) of the seal body, the convex base portion (520) extending between the indentation (522) and the supply opening (130) and the convex sealing portion (510) extending between the indentation (522) and the first and second nostril prongs (120,121).
4. The nasal seal (500) of any one of Claims 1-3, wherein the bellows portion is configured to allow for linear compression and/or expansion of the seal body in an axial

direction along an axis extending through a center of the supply opening (130) and between the first and second nostril prongs (120,121).

5. The nasal seal (500) of any one of Claims 1-4, wherein the bellows portion allows the prongs (120,121) to pivot such that an angle of the prongs (120,121) relative to the supply opening (130) can vary.

6. The nasal seal (500) of any one of Claims 1-5, wherein a volume of a portion of the inner cavity defined by the base portion (520) is less than a volume of a portion of the inner cavity defined by the sealing portion (510).

7. The nasal seal (500) of any one of Claims 1-6, wherein a curvature of the bellows portion corresponds to a curvature of a lower surface of the sealing portion (510) adjacent the indentation (522), and wherein a distance between the bellows portion and the lower surface of the sealing portion is substantially constant around a circumference of the seal body.

8. The nasal seal (500) of any one of Claims 1-7, wherein a thickness of the bellows portion is substantially constant throughout the bellows portion.

9. The nasal seal (500) of any one of Claims 1-8, wherein the sealing portion (510) comprises a pair of thickened regions (530), each associated with one of the first nostril prong (120) and the second nostril prong (121).

10. The nasal seal (500) of any one of Claims 1-9, further comprising a thickened portion surrounding the supply opening (130).

11. The nasal seal (500) of any one of Claims 1-7 and 9-10, wherein a middle section of the bellows portion is thinner than a section of the bellows portion adjacent the supply opening (130) and a section of the bellows portion closest to the first and second nostril prongs (120,121).

12. The nasal seal (500) of any one of Claims 1-9 and 11, wherein the supply opening(130) is generally elliptical and a thickened portion extending around and defining the supply opening (130) is generally elliptical.