WHAT IS CLAIMED IS:

1. A patient interface system comprising:

an interface portion adapted to create a seal with at least a nose of a user;

a coupling that permits the patient interface system to be coupled to a gas delivery system;

a headgear system that allows the interface portion to be positioned and retained on a head of the user with the headgear system providing a transformational locking behavior with an ability to transform from an elastic type elongation behavior to a generally non-elongating type behavior when the patient interface system is in use,

the transformational locking behavior being provided by a mechanically based directional lock,

the transformational locking behavior being so as to automatically achieve a balanced fit of the headgear system to the user without the need for manual adjustment of the headgear assembly to fit the headgear system to the user.

2. The patient interface system of Claim 1, wherein the headgear system provides the non-elongating type behavior in the range of about 0.5N to about 65N

3. The patient interface system of any one of Claims 1-2, wherein the ~~transformational locking behavior is provided by a~~ mechanically based directional lock ~~that~~ comprises a lock enclosure, a movable lock member and a core member.

4. The patient interface system of Claim 3, wherein a cross-sectional dimension of the core member is in the range of about 0.1mm to about 8mm.

5. The patient interface system of Claim 3 or Claim 4, wherein the lock member is capable of moving relative to the core member through a range of angles between about 0° to about 45°.

6. The patient interface system of any one of Claims 3-5, further comprising a biasing mechanism that acts on the lock member and controls ~~the~~ a ~~lock~~ holding force of the lock.

7. The patient interface system of any one of Claims 3-6, wherein the directional lock incorporates a friction promoter to facilitate lock activation.

8. The patient interface system of any one of Claims 3-7, wherein the core member is a cord.

9. The patient interface system of any one of Claims 3-7, wherein the core member is a strap.

10. The patient interface system of any one of Claims 1-9, wherein the elastic type elongation is provided by an elastic type elongation system comprising a fabric spring having an integrated elastic element.

11. The patient interface system of Claim 10, wherein the fabric spring is constructed as a braid where the elastic element and the non-elastic element are combined in such a manner that the non-elastic element provides a physical end stop to extension before the elastic element is plastically deformed.

12. The patient interface system of Claim 11, wherein the amount of elastic element within the braid is selected to achieve a desired force versus extension property of the fabric spring.

13. The patient interface system of Claim 1, wherein the ~~transformational locking behavior is provided by a~~ mechanically based directional lock ~~that~~ comprises a housing, a movable lock member within the housing and a core member, wherein the housing guides movement of the core member, and wherein both the housing and the lock member are formed by a single integrated module.

14. The patient interface system of Claim 1, wherein the ~~transformational locking behavior is provided by a~~ mechanically based directional lock ~~that~~ comprises a lock module, a non-elastic portion and an elastic portion, wherein the lock module, the non-elastic portion and the elastic portion form a modular adjustment assembly.

15. The patient interface system of Claim 14, wherein the interface portion is a mask and the modular adjustment assembly is connected to a frame of the mask.

16. The patient interface system of Claim 15, wherein the frame comprises one or more walls defining a space that receives the lock module.

17. The patient interface system of Claim 14, wherein the modular adjustment assembly is connected to a portion of the headgear system.

18. The patient interface system of Claim ~~15~~17, wherein the portion of the headgear system is a rear portion comprising at least one of a lower rear strap and a crown strap.

19. The patient interface system of any one of Claims 1-18, wherein the transformational locking behavior has a first lock stage that provides a first lock force and a second lock stage that provides a second lock force, wherein the second lock force is greater than the first lock force.

20. The patient interface system of Claim 19, wherein the first lock stage transforms to the generally non-elongating type behavior with less elongation movement than the second lock stage.