CLAIMS:

1. A headgear (1000) arrangement for retaining a mask (100), the headgear (1000) arrangement comprising:

a granular jamming layer in one or more portions of the headgear arrangement, the granular jamming layer (1020) providing a variable stiffness portion configured to selectively transition between a decreased stiffness state and an increased stiffness state, wherein the granular jamming layer (1020) comprises a density-dependent, variable viscosity material contained in a compressible chamber, and wherein the headgear (1000) arrangement comprises a crown strap (1002), a rear portion (1004), an upper strap (1006), a lower strap (1008), an upper connection (1010) and a lower connection (1012), the upper (1010) and lower connections (1012) being configured to connect a mask (100) to the headgear (1000) arrangement.

2. The headgear (1000) arrangement according to claim 1, wherein the variable viscosity material is a granular material.

3. The headgear (1000) arrangement according to claim 1 or 2, wherein the compressible chamber is an air-tight bladder configured to maintain a vacuum therein and so as to collapse against a granular material, increase the density thereof and thereby increase the viscosity of the granular material therein and transition the variable stiffness portion to the increased stiffness state.

4. The headgear (1000) arrangement according to any one of claims 1 to 3, additionally comprising a releasable one-way valve mounted to the air-tight bladder.

5. The headgear (1000) arrangement according to any one of claims 1 to 4, wherein the variable stiffness portion defines at least about 60-80% of the one or more portions of the headgear arrangement.

6. The headgear (1000) arrangement according to any one of claims 1 to 5, wherein the variable stiffness portion extends across at least about substantially the entire width of the headgear arrangement (1000).

7. The headgear (1000) arrangement according to any one of claims 1 to 6, wherein the granular jamming layer (1020) comprises at least first and second granular jamming chambers, wherein preferably the first granular jamming chamber comprises first granules and the second granular jamming chamber comprises second granules, the first granules being different from the second granules.

8. The headgear (1000) arrangement according to any one of claims 1 to 7, wherein the one or more portions of the headgear arrangement comprise a granular layer casing containing a granular material, wherein preferably the granular casing comprises a flexible or elastic material, wherein preferably the granular casing comprises a vacuum connection, wherein preferably the granular casing comprises a one-way valve, and wherein preferably the granular casing is configured to compress the granular material when a vacuum is applied to the granular casing, to transition the granular layer into a jammed state.

9. The headgear (1000) arrangement according to any one of claims 1 to 8, wherein the headgear (1000) arrangement is configured to be applied to the head of a user with the granular layer chamber in a neutral state.

10. The headgear (1000) arrangement according to any one of claims 1 to 9, wherein the granular layer is configured to act as a sizing adjustment mechanism.

11. The headgear (1000) arrangement according to any one of claims 1 to 10, wherein

the headgear arrangement (1000) comprises a shape sustaining layer,

wherein preferably the shape sustaining layer comprises a semi-rigid material, such that the shape sustaining layer provides structural support to the headgear arrangement when the granular layer is in a flexible neutral state,

wherein preferably the shape sustaining layer is configured to keep the headgear (1000) arrangement in a substantially open, three-dimensional shape,

wherein preferably the headgear arrangement comprises the shape sustaining layer in one or limited parts of the headgear arrangement,

wherein preferably the shape sustaining layer is a discontinuous shape sustaining layer (1026) throughout the headgear (1000) arrangement.

12. The headgear (1000) arrangement according to any one of claims 1 to 11, wherein

the headgear (1000) arrangement comprises a cushioning layer (1028) positioned on an inner side of the granular jamming layer and/or the shape sustaining layer (1026), when present,

wherein preferably the cushioning layer (1028) is configured to be in direct contact with a user's head or skin or hair, or separated from the user's head by a decorative outer layer,

wherein preferably the cushioning layer (1028) comprises a foam, textile, elastomer, or spacer fabric, and

wherein preferably the cushioning layer (1028) is elastic.

13. The headgear (1000) arrangement according to any one of claims 1 to 12, wherein the headgear (1000) arrangement comprises a decorative outer layer.