functions to prevent leakage of the fluid from the cavity **125** through the layer **110** onto the surface **115**. The additional layer **111** is preferably continuous without any perforations, preventing the passage of the fluid through the additional layer **111** to the layer **110** where the fluid may leak through the pocket onto the surface **115**. Alternatively, the additional layer **111** may function to allow fluid to pass through proximal to the first portion **210** of the layer **110** that does not include pockets and to prevent fluid to pass through proximal to the second portion **220** of the layer **110** (for example, by forming a webbing between the additional layer **111** and the layer **110** that directs flow of fluid as desired), thus preventing fluid from leaking out the pockets to the surface **115**. However, the additional layer **111** may prevent leakage of fluid through the layer **110** to the surface **115** in any other suitable method. The pocket of this variation may also be defined using the layering method of thin-layers described above, but may alternatively be defined in a post-manufacturing process, for example, a stamping process. The layer **110** may be manufactured as a continuous sheet using any suitable method and then cut using a cutting die, creating a pocket through the thickness of the layer **110**. The cutting die may create a plurality of pockets at one time, but may alternatively create one pocket at a time. However, any other method and/or process suitable to creating the pocket may be used.

[0037] The pocket of the second variation is preferably of a circular shape (e.g., spherical or cylindrical), but may alternatively be of an arc shape, a rectangular shape (e.g., a rectangular prism), or any other shape suitable to providing the desired geometry of the deformation of the particular region **113**.

Second Preferred Embodiment

Third Variation

[0038] In a third variation of the second preferred embodiment, as shown in FIG. **10**, the layer **110** is preferably constructed of a material wherein the molecules, fibers, or an other suitable component of the material may be aligned in a particular direction to influence the overall pliability (i.e., elastic modulus) of the material, for example, the pliability of a polymer material. In this variation, the layer **110** preferably includes a first portion **210** wherein the components of the material are aligned in a first direction and a second portion **220** wherein the components of the material are aligned in a second direction. The effective pliability of the layer **110** seen from the force applied by the deformed cavity **125** is preferably higher in the second portion **220** than the first portion **210**. For example, in the variation where the layer **110** is a polymer material, polymers molecules that are aligned in a parallel fashion are less structurally resistant to force applied perpendicular to the molecules than a force applied along the direction of alignment. Additionally, polymer molecules that are arranged in a lattice structure (e.g., a "criss-cross" pattern) are also relatively structurally resistant to applied force. Because of these material properties, in this example, the molecules are aligned perpendicular to the force resulting from the deformation of the cavity **125** in the second portion **220** and parallel to the force resulting from the deformation of the cavity **125** and/or arranged in a lattice pattern in the first portion **210** (as shown in FIG. **16***a* and **16***b*). The layer **110** may also include a third portion wherein the molecules are aligned at an angle in between a perpendicular angle and a parallel angle to the force resulting from the deformation of the cavity **125**. This third portion preferably functions as a transitional region between the first portion **210** and the second portion **220**. The third portion may alternatively function to provide additional control of the shape of the deformation of the particular region **113**. For example, in the variation wherein the deformation of the particular region **113** is a square-like deformation, the third portion may function to form a concave portion of the square, providing the user with a tactile indication of where to place their finger, similar that seen on a key of a keyboard. The second portion **220** effectively acts as a material with higher pliability than the first portion **210** and substantially biases the particular region **113** to deform at a higher degree at the second portion **220** than at the first portion **210**. The second portion of the third variation preferably functions similarly or identically to the second portion of a second thickness in the first variation. However, any other arrangement of the components of the material of the layer **110** suitable to establishing a first and second portion may be used. Additionally, similar to the first variation, the layer **110** may include a plurality of first and second portions **210** and **220** to create a desired shape for the deformation of the particular region **113**.

[0039] Implementation of regions of higher pliability and regions of lower pliability is preferably achieved in one of the above variations, but may alternatively be of any combination or permutation of the above variations or any other suitable variations.

3. Third Preferred Embodiment

Material

[0040] The third preferred embodiment utilizes the material composition of the layer **110** in relation to the attachment points **112** to control the shape of the deformation of the particular region **113**. The attachment points **112** of the third preferred embodiment are preferably similar or identical to those of the first preferred embodiment. The material composition of the layer **110** in relation to the attachment points **112** preferably create regions of higher pliability and regions of lower pliability. As the cavity **125** is expanded, the particular region **113** is deformed to accommodate for the adjusted volume and pressure. The regions of relatively higher pliability will deform (e.g. stretch, bend, and/or compress) more while the regions of relatively lower pliability will deform less. The implementation of certain combinations of these regions along the layer **113** allows for the control of the shape of the deformation of the particular region **113**. Implementation of such regions of relatively higher pliability and regions of relatively lower pliability is preferably achieved in one of several variations.

[0041] In a first variation of the third preferred embodiment, as shown in FIGS. **17***a* and **17***b*, the layer **110** may include a first portion **210** of a first type of material and a second portion **220** of a second type of material. The second type of material preferably has a higher pliability than the first type of material, resulting in higher pliability of the second portion **220** than the first portion **210**. The second portion **220** of this first variation of the third preferred embodiment preferably functions similarly or identically to the second portion **220** of the first variation of the second preferred embodiment.

[0042] The first and second portions **210** and **220** are preferably assembled during the manufacturing of the layer **110**. For example, the layer **110** may be created using a double injection molding process such that the first and second types