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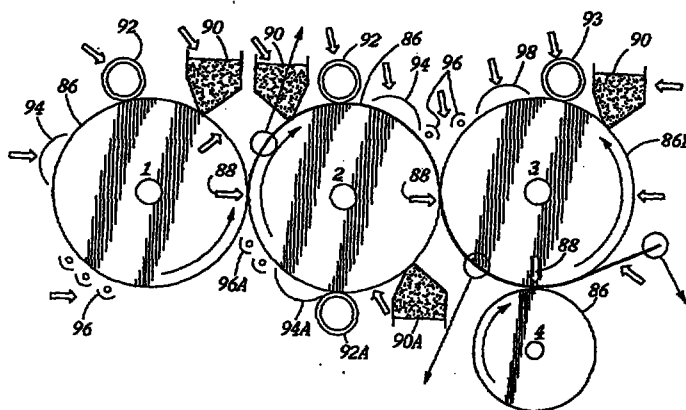
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(54) Title: **DIRECT FORMING OF NON-TEXTILE FABRIC ELEMENTS FROM THERMOPLASTIC PELLETS OR THE LIKE**



(57) Abstract: An inventive solid phase forming process, and related structure, using conventional pelletized thermoplastic compositions to form the elements of a non-textile fabric by coining a single pellet or briquette of the polymer into an individual element in a single forming step. The steps of the process generally include: a) positioning a pellet in or adjacent to a mold cavity, and b) forcing the pellet into contact with the mold surfaces of the mold cavity to plastically deform the pellet to cause the pellet to adapt the shape of the mold cavity. The mold cavity has a shape to form the desired element, and its volume is substantially the same as the volume of the pellet. The forcing step or act preferably uses an energy and speed wherein the pellet superplastically deforms to substantially fill the volume of the mold cavity. This process is repeated with the particular element being formed in the appropriate order to form interconnected plates and rivets, as an example, with the final result being a non-textile fabric. The elements formed by the inventive process can have any of a variety of shapes, and can form base units for the formation of the non textile fabric of two, three or more elements. This inventive process eliminates the need to first form the pelletized polymer into a sheet or other type of preform prior to the forming of the final product.