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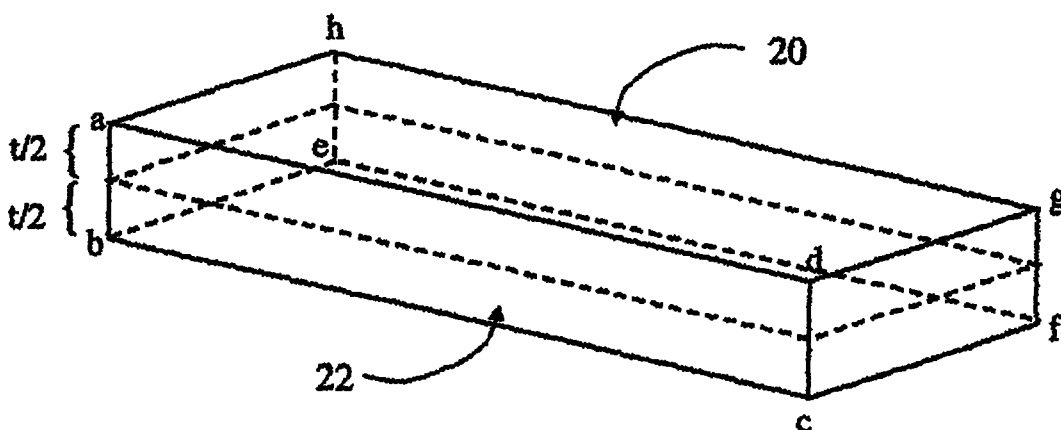
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(54) Title: APPARATUS AND METHOD FOR STRUCTURAL ANALYSIS



(57) Abstract: Stresses in an object are modelled by finite element analysis, via opposing shell elements (20, 22) defined on a surface mesh. The surface mesh is generated on a representation of the exterior surface of the object; a plurality of eccentric shell elements (20, 22) are defined by nodes (a, b, c, d, e, f, g, h) on the exterior surface, with thicknesses equal to half the thickness of the object at the shell elements (20, 22); multipoint constraints are established between the nodes corresponding opposed shell elements (20, 22); boundary conditions and loading conditions such as dynamic, static or thermal loads are specified; and the corresponding displacement, strain and stress are calculated. The method is applicable, for example, to structural and warpage analysis of injection molded parts having thin walls.