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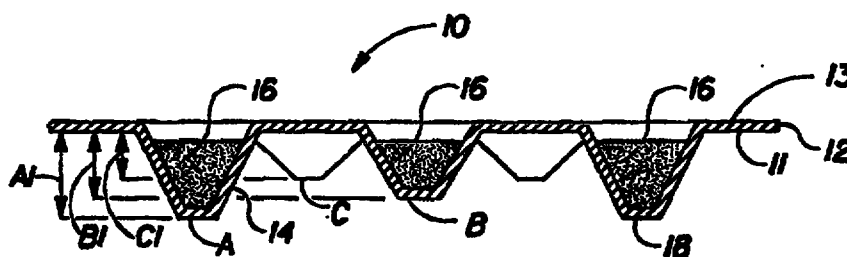
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(54) Title: SELECTIVELY-ACTIVATIBLE THREE-DIMENSIONAL SHEET MATERIAL HAVING MULTI-STAGE PROGRESSIVE ACTIVATION TO DELIVER A SUBSTANCE TO A TARGET SURFACE



(57) Abstract

The present invention provides a selectively-activatable sheet material (10) for delivering a substance (16) to a target surface. The sheet material comprises a three-dimensional sheet of material having a first side (13) and a second side (11). The first side has a plurality of hollow protrusions (14) extending outwardly therefrom and separated from one another by valleys, while the second side has a plurality of depressions corresponding with the hollow protrusions. A substance (16) adheres to and partially fills a location protected from external contact comprising the valleys and/or depressions. The sheet material may be selectively activated by deforming the hollow protrusions to deliver the substance to a target surface. The three-dimensional structure (10) includes hollow protrusions (14) which are adapted to progressively activate in multiple discrete stages to effect multi-stage progressive delivery of the substance to the target surface. The present invention also provides selectively-activatable sheet materials which incorporate a three-dimensional structure adapted to progressively activate in response to increasing compressive force levels via tailoring of the geometrical shapes of respective hollow protrusions. The present invention also provides selectively-activatable sheet materials which incorporate a three-dimensional structure adapted to progressively activate in response to increasing levels of deformation via tailoring of the geometrical shapes of respective hollow protrusions.