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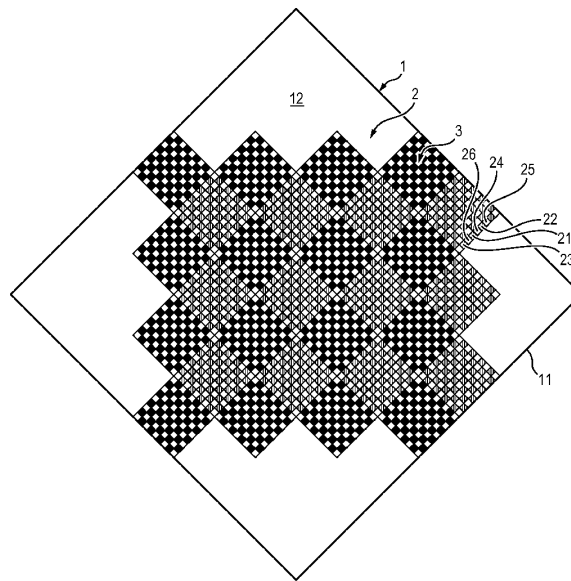
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(54) Title: RECONFIGURABLE ANTENNA ASSEMBLY HAVING A METASURFACE OF METASURFACES

FIG. 1



(57) Abstract: The invention concerns an antenna assembly, comprising: - a single substrate (1) having a lower surface (11) and a upper surface (12); - an isotropic source of spherical electromagnetic waves configured for emitting surfaces waves on the upper surface (12) of the substrate; - a ground plane formed on the lower surface (11) of the substrate constituted by a metallic deposit on the entire lower surface (11); - an antenna element (2) formed on the upper surface (12) of the substrate (1) said antenna element (2) being constituted by a periodic patterns metasurface formed on the substrate by a texture of subwavelength patches, said antenna element being constituted of - a first-scale metasurface defined by a two-dimensional alternation (2) of metal or metamaterial patches (21, 22, 23) having closely spaced vertices in each contiguous element thus forming small gaps; - a plurality of switches (211, 212) disposed in the gap (200) between the vertexes of the patches, each switch (211, 212) permitting to connect several patches through the vertexes

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for defining a second-scale metasurface having a pattern thus forming the antenna element; wherein each patch has dimensions which do not depend to the frequency of the waves to be radiated, the antenna element being configured for transforming the emitting surface waves on leaky waves.