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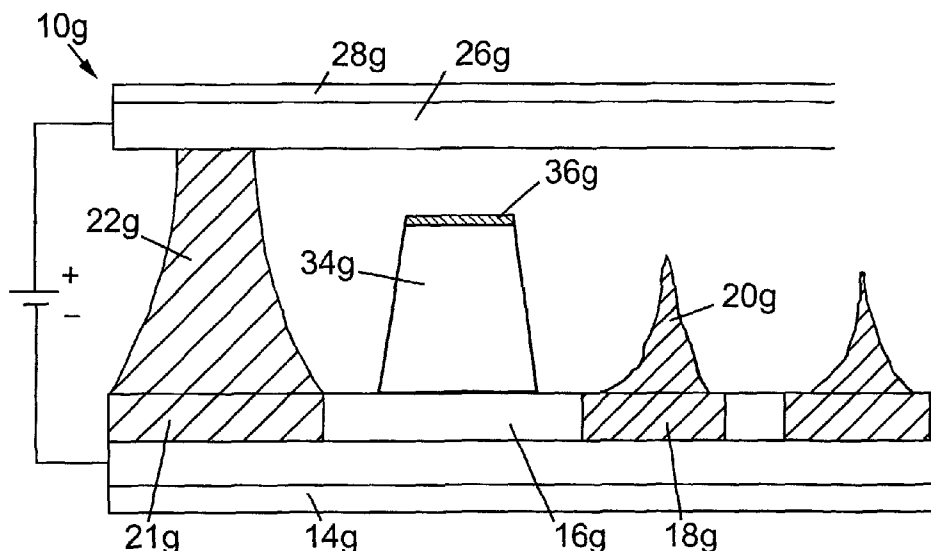
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(54) Title: FIELD EMISSION BACKPLATE



(57) Abstract: A field emission backplate 12g formed by laser crystallising an area of amorphous semiconductor based material. Emitter sites 20g result from the rough surface texture caused by the crystallisation process. The crystallisation may be localised using laser interferometry, and profiled emitter tips (20j) grown on the localised crystalline areas (18j). Such backplates can be used in field emission devices emitting into either a vacuum or a wide band gap light emitting polymer. Furthermore, a backplate (12m) having self aligned gates can be formed by depositing an insulator layer (38m) and metal layer (40m) over the emitter tips, removing the top of the metal layer and etching away the insulator, leaving each tip surrounded by a metal rim. A planarising agent (39n) can be used to refine this process.

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