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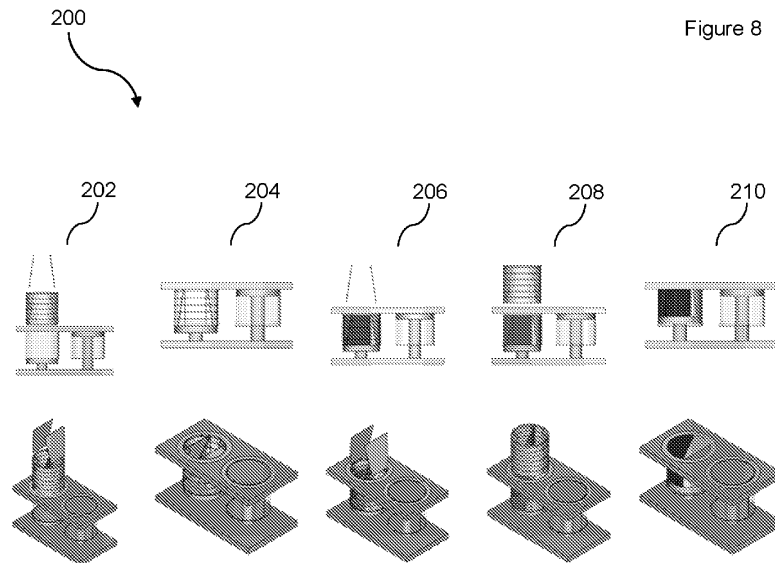


Figure 8

(57) Abstract: The present disclosure generally relates to a method of fabricating a graded metallic structure by additive manufacturing and the graded metallic structure thereof. The method comprises preparing a material powder in a supply container, the material powder is partitioned into a plurality of longitudinal volumes and comprises different metallic powders, performing an additive manufacturing process comprising supplying layers of the material powder from the supply container, displacing the layers of material powder to a fabrication platform and fusing the layers of material powder on the fabrication platform to form the graded metallic structure, wherein at least one longitudinal volume has a varying transverse cross-sectional area and at least one longitudinal volume has a varying longitudinal cross-sectional area, such that the fused metallic powders in the graded metallic structure are graded along the longitudinal and the transverse. This method is proven to be effective to make graded metal parts with composition gradients in two dimensions.

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