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(54) Title (EN): METHODS AND APPARATUS FOR THREE-DIMENSIONAL FABRICATION BY TOMOGRAPHIC BACK PROJECTIONS

(54) Title (FR): PROCÉDÉS ET APPAREIL DE FABRICATION EN TROIS DIMENSIONS PAR DES RÉTROPROJECTIONS TOMOGRAPHIQUES

(57) Abstract:

(EN): A method for producing a three-dimensional object comprising computing a sequence of back-projections describing the three-dimensional object to be formed from different orientation angles of said object, defining a sequence of patterns of light using said back-projections, and irradiating with each of said patterns of light at the respective corresponding orientation angle and according to the defined sequence a photoresponsive material that is capable of alteration of its material phase upon irradiation by light, thereby creating a three-dimensional distribution of alterations within the photoresponsive medium which physically reproduces said three-dimensional object, thereby creating the three-dimensional object.

(FR): La présente invention concerne un procédé de production d'un objet tridimensionnel comprenant les étapes consistant à calculer une séquence de rétroprojections décrivant l'objet tridimensionnel à former à partir de différents angles d'orientation dudit objet, définir une séquence de motifs de lumière à l'aide desdites rétroprojections, et irradier avec chacun desdits motifs de lumière à l'angle d'orientation correspondant respectif et selon la séquence définie d'un matériau photosensible qui est apte à modifier sa phase de matériau lors de l'irradiation par la lumière, ce qui permet de créer une répartition tridimensionnelle d'altérations à l'intérieur du support photosensible qui reproduit physiquement ledit objet tridimensionnel, ce qui permet de créer l'objet tridimensionnel.

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