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(54) Title: METHODS, DEVICES, AND SYSTEMS FOR THE FABRICATION OF MATERIALS AND TISSUES UTILIZING ELECTROMAGNETIC RADIATION

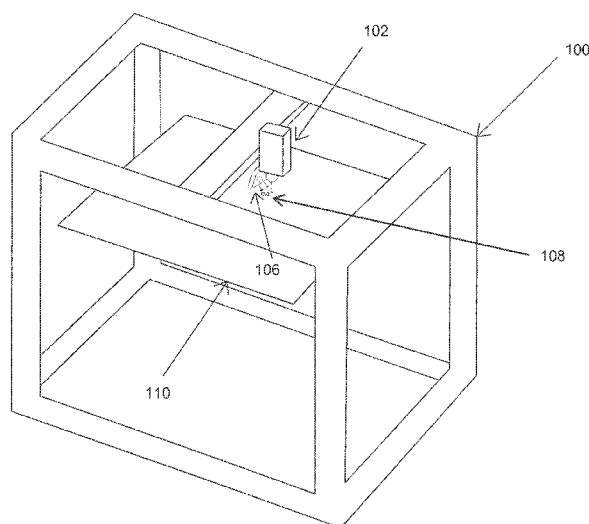


FIG. 1

(57) Abstract: The present invention provides a three-dimensional bioprinter for fabricating cellular constructs such as tissues and organs using electromagnetic radiation (EMR) at or above 405 nm. The bioprinter includes a material deposition device comprising a cartridge for receiving and holding a composition which contains biomaterial that cures after exposure to EMR. The bioprinter also includes an EMR module that emits EMR at a wavelength of about 405 nm or higher. Also provided is a bioprinter cartridge which contains cells and a material curable at a wavelength of about 405 nm or greater. The cells are present in a chamber and are extruded through an orifice to form the cellular construct.

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