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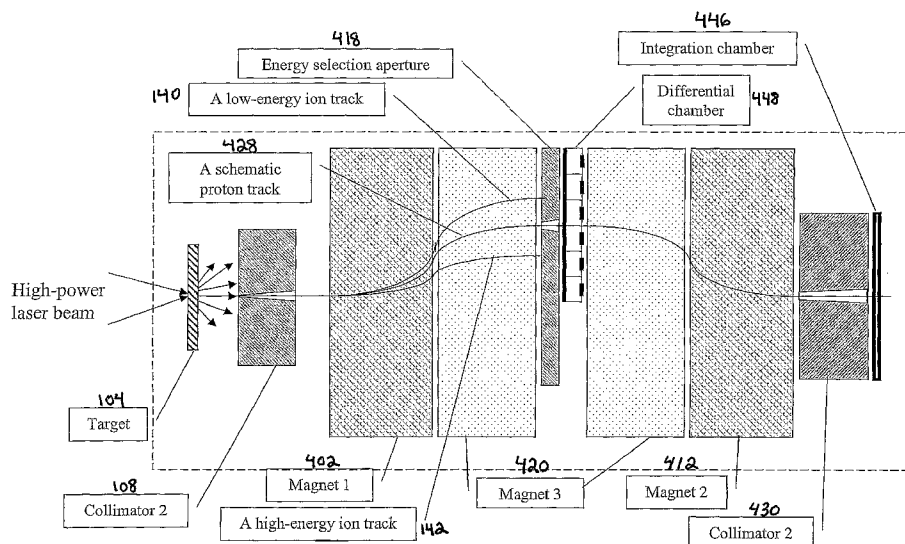
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(54) Title: HIGH ENERGY POLYENERGETIC ION SELECTION SYSTEMS, ION BEAM THERAPY SYSTEMS, AND ION BEAM TREATMENT CENTERS



(57) Abstract: Devices and methods are provided for generating laser-accelerated high energy polyenergetic positive ion beams that are spatially separated and modulated based on energy level. The spatially separated and modulated high energy polyenergetic positive ion beams are used for radiation therapy. In addition, methods are provided for treating patients in radiation treatment centers using therapeutically suitable high energy polyenergetic positive ion beams that are provided by spatially separating and modulating positive ion beams. The production of radioisotopes using spatially separated and modulated laser-accelerated high energy polyenergetic positive ion beams is also provided.

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