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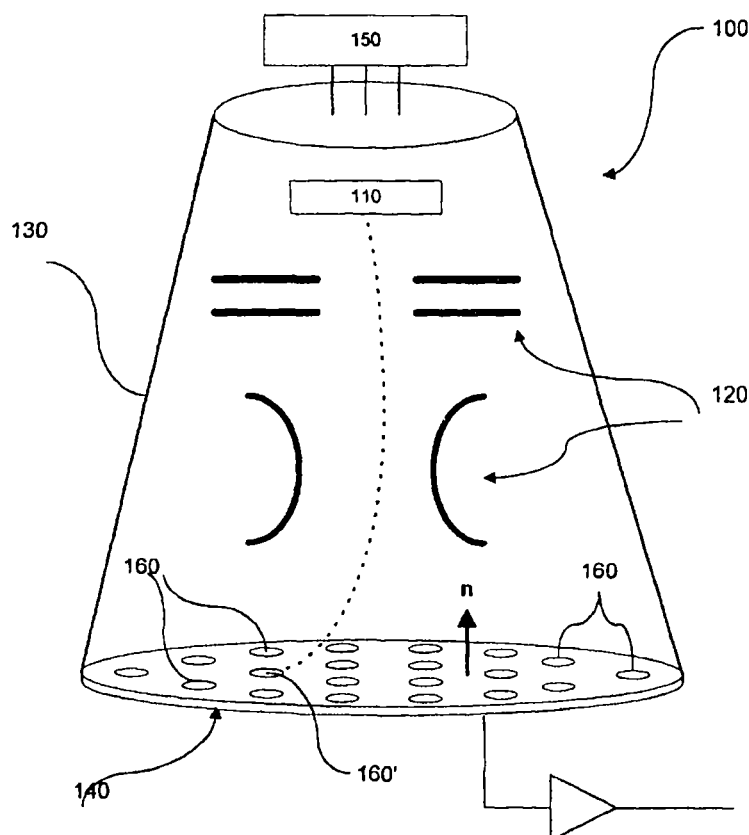
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(54) Title: QUANTUM MAGNETIC MEMORY



(57) Abstract: A system for storing data on a magnetic medium (140) using spin polarized electron beams is provided. The system includes a source (110) of spin polarized electrons and a storage medium (140) disposed a selected distance from the source. The storage medium has a plurality of storage locations (160), each of which includes a layer of magnetic material sandwiched between first and second layers of a half-metallic material. The resulting sandwich structure forms a spin dependent electron trap that increases coupling between beam electrons in a first spin state and target electrons in a second spin state. An electron optics system (120) directs the source of spin polarized electrons to one of the plurality of storage locations.

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