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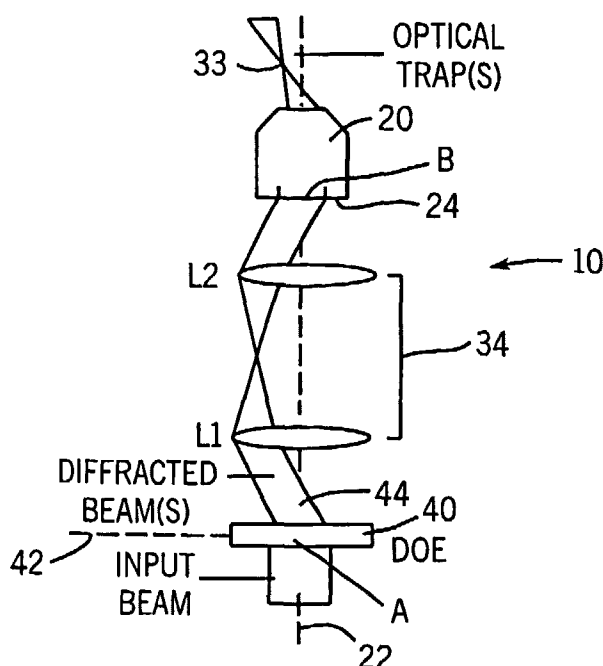
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(54) Title: OPTICAL ACCELERATOR AND GENERALIZED OPTICAL VORTICES



(57) Abstract: A method and system for generating modulated optical vortices. Optical vortices can be used for a variety of applications, such as applying controlled torque or controlled force patterns to objects from a few nanometers to hundreds of micrometers in size. Numerous optical modes of optical vortices can be created to meet virtually any desired need in manipulating of objects. Furthermore, one can modify the wavefront of a beam of light in a specific way to create a new type of optical trap useful for manipulating mesoscopic materials. When the modified beam is brought to a focus, the resulting optical trap exerts forces transverse to the optical axis that can be used to transport mesoscopic matter such as nanoclusters, colloidal particles, and biological cells.

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**(15) Information about Correction:**

see PCT Gazette No. 24/2004 of 10 June 2004, Section II

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*