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(54) Title: DYNAMIC RANGE EXTENSION OF OPTICAL SYSTEMS WITH MULTIPLE LOW INTENSITY BEAMS

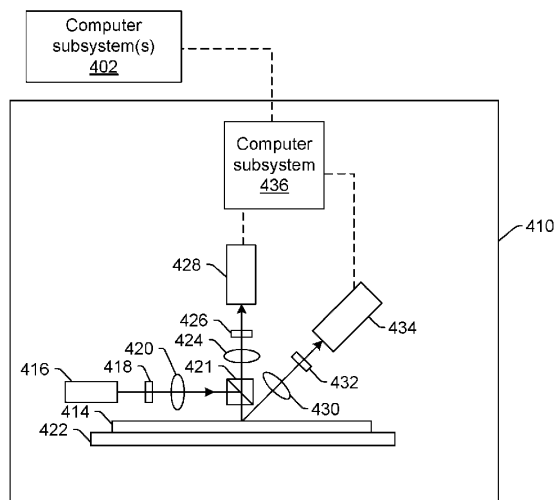


Fig. 4

(57) Abstract: Methods and systems for extending the dynamic range of imaging systems are provided. One system includes an optical element that separates a light beam into a primary beam and one or more pairs of secondary beams. The primary beams in each pair are located on opposite sides of the primary beam, respectively. The primary beam has a higher intensity than all of the secondary beams. Focusing optics simultaneously focus the primary beam and the secondary beams to different, spatially separated spots, respectively, in an imaging plane of the system. The system illuminates the specimen with the different, spatially separated spots. The optical element is preferably configured so that light from the spots on the specimen illuminated with the primary beam and all of the secondary beams on at least one side of the primary beam are incident on a field of view of a detector of the system.

[Continued on next page]

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