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(54) Title: MULTISPECTRAL STEP-AND-STARE IMAGING WITH SINGLE SENSOR

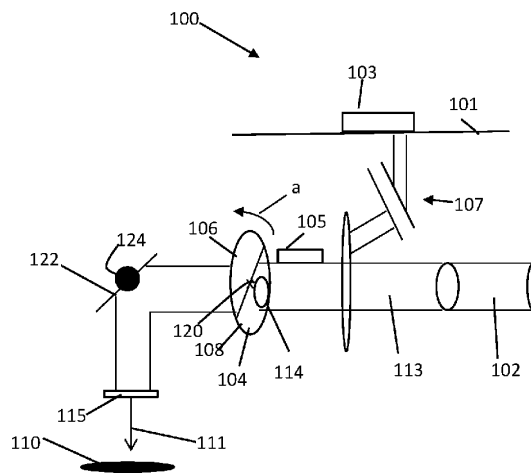


Fig. 2A

(57) Abstract: A multispectral image capture device includes an imaging platform having arranged thereon an image sensor comprising a photosensitive surface and an optical unit, a gimbal system for controlling a line of sight of the image sensor, a filter wheel comprising a series of n spectral filters arranged between the image sensor and an imaging target; and a drive system configured to rotate the filter wheel at a constant velocity so as to bring each of the spectral filters into a line of sight between the image sensor and the imaging target. A controller is adapted to synchronize movement of the imaging platform, control of line of sight of the image sensor with the gimbal, and constant rotation of the filter wheel, such that the image sensor captures a sequence of overlapping step-and-stare images through the series of rotating spectral filters without changing a speed of rotation of the filter wheel.

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