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**Shabtay et al.**

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(54) **ZOOM DUAL-APERTURE CAMERA WITH FOLDED LENS**

13/19689; G06T 2207/30232; H04N 7/18; G06K 9/00771; G06K 348/143

See application file for complete search history.

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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CPC ..... **H04N 5/247** (2013.01); **G02B 7/09** (2013.01); **G02B 13/0065** (2013.01); **G02B 13/02** (2013.01); **H04N 5/2253** (2013.01)

(58) **Field of Classification Search**  
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(57) **ABSTRACT**

Zoom digital cameras comprising a Wide sub-camera and a folded fixed Tele sub-camera. The folded Tele sub-camera may be auto-focused by moving either its lens or a reflecting element inserted in an optical path between its lens and a respective image sensor. The folded Tele sub-camera is configured to have a low profile to enable its integration within a portable electronic device.

**30 Claims, 15 Drawing Sheets**

