



(12) **United States Patent**
Yu et al.

(10) **Patent No.:** **US 9,097,860 B2**
(45) **Date of Patent:** **Aug. 4, 2015**

(54) **LENS ASSEMBLY**

(56) **References Cited**

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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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(21) Appl. No.: **14/141,665**

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(22) Filed: **Dec. 27, 2013**

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(65) **Prior Publication Data**

US 2015/0062724 A1 Mar. 5, 2015

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(30) **Foreign Application Priority Data**

Sep. 2, 2013 (TW) 102131525

(57) **ABSTRACT**

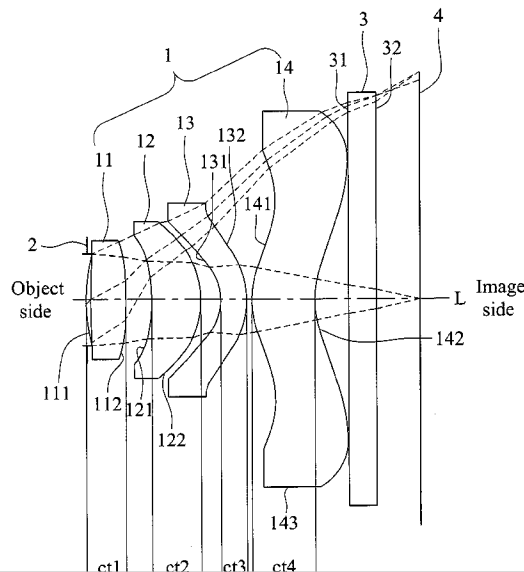
(51) **Int. Cl.**
G02B 3/02 (2006.01)
G02B 9/34 (2006.01)
G02B 13/00 (2006.01)
G02B 13/04 (2006.01)

A lens assembly includes a lens set which includes a first lens, a second lens, a third lens and a fourth lens arranged in sequence along an optical axis. The first lens has a positive optical power. The second lens has a positive optical power. The third lens has a negative optical power. The fourth lens has a positive optical power, and has an image-side surface, an object-side surface, and a peripheral surface interconnecting the two. At least one of the object-side and image-side surfaces has an inflection point located between the optical axis and the peripheral surface. The lens assembly satisfies $15 < \text{HFOV}/f < 50$, in which, HFOV represents one half of a maximum angle of view of the lens assembly, and f represents a focal length thereof.

(52) **U.S. Cl.**
CPC **G02B 9/34** (2013.01); **G02B 13/004** (2013.01); **G02B 13/04** (2013.01)

(58) **Field of Classification Search**
CPC G02B 13/0045
USPC 359/715
See application file for complete search history.

7 Claims, 9 Drawing Sheets



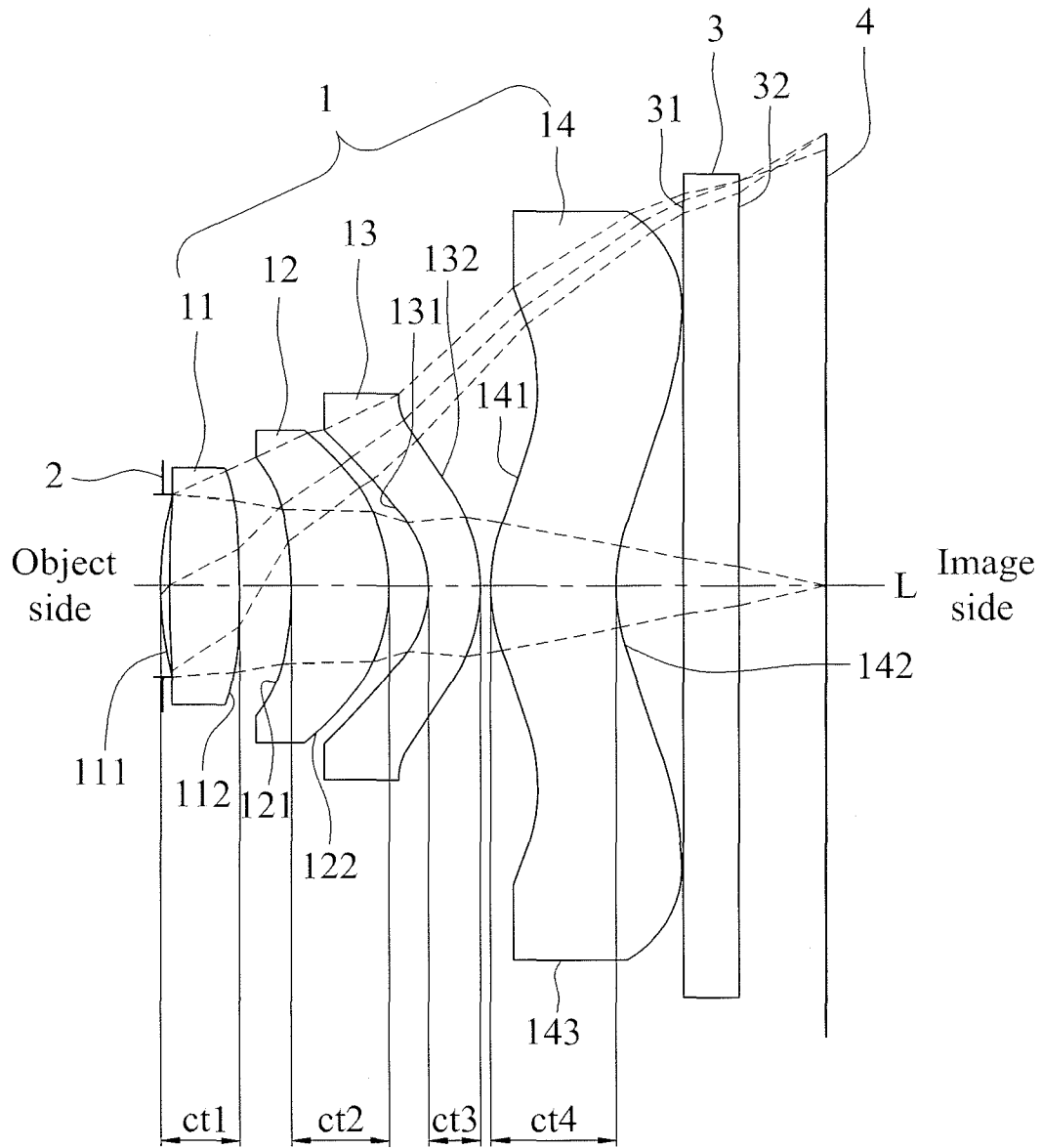


FIG. 1

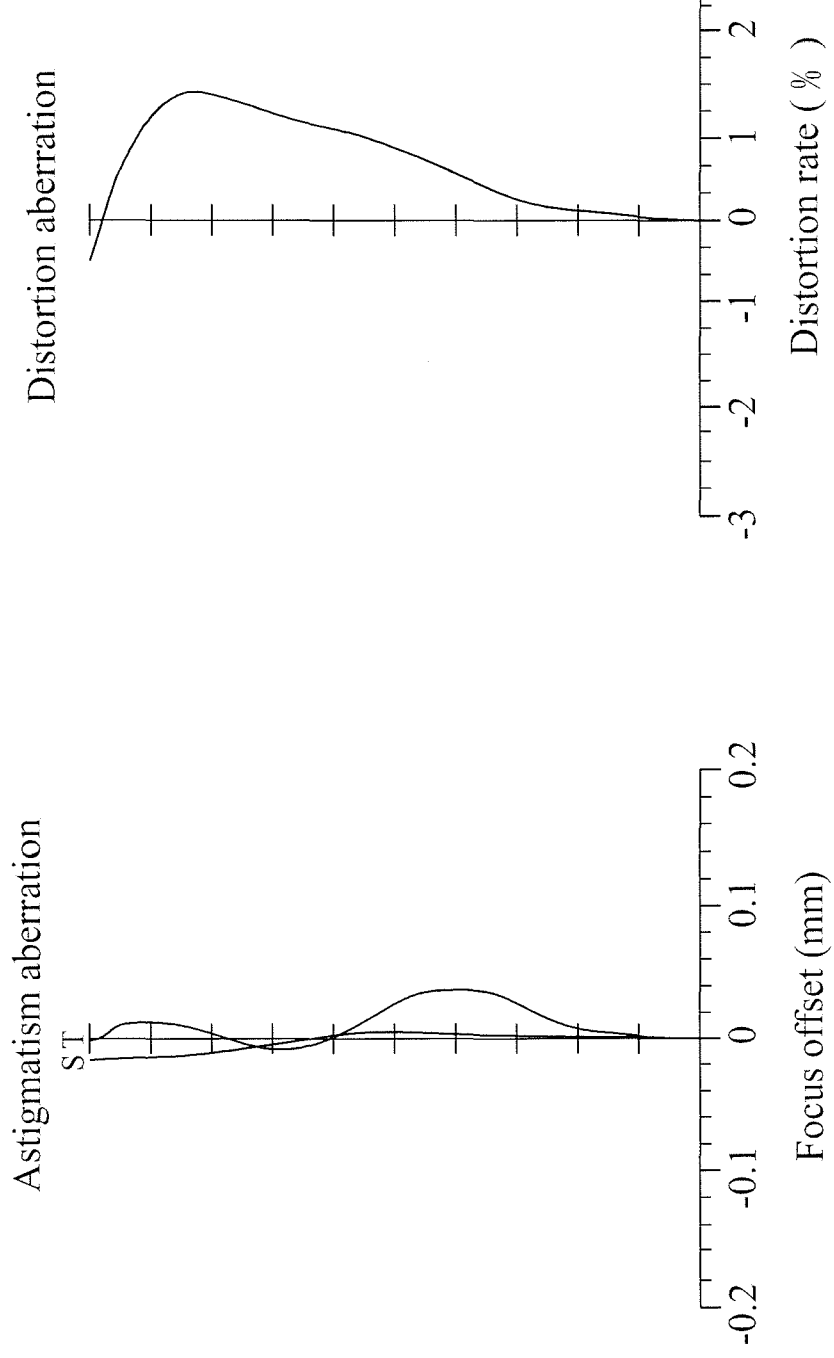


FIG.2

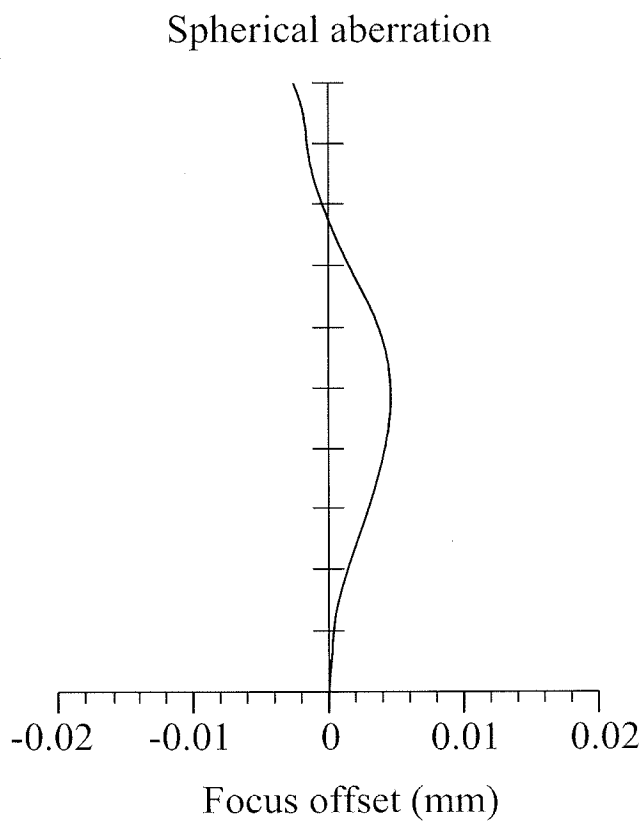


FIG.3

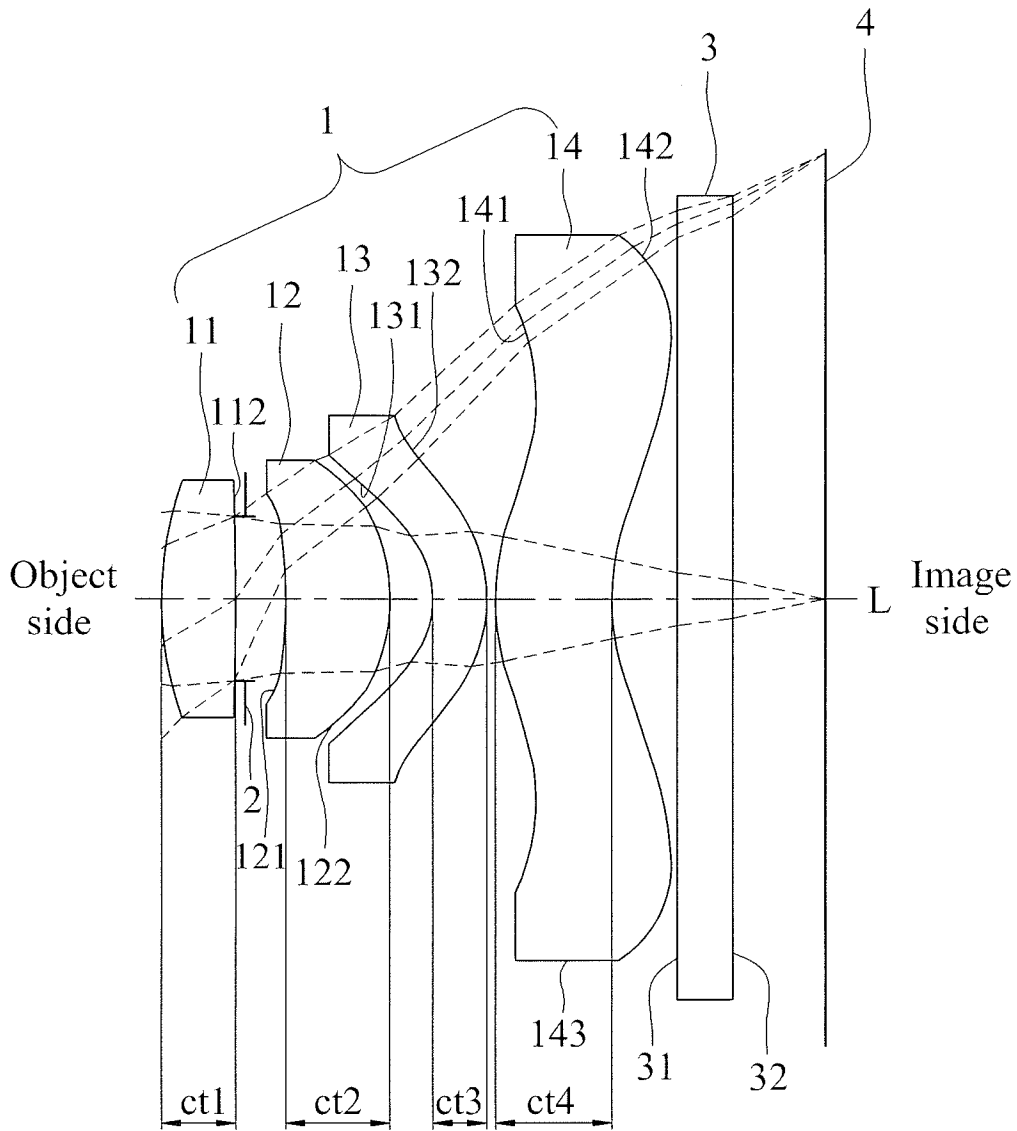


FIG.4

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