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**Chen et al.**

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(54) **OPTICAL LENS SET**

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U.S.C. 154(b) by 127 days.

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(30) **Foreign Application Priority Data**

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(51) **Int. Cl.**

**G02B 9/60** (2006.01)  
**G02B 13/00** (2006.01)  
**G02B 5/00** (2006.01)  
**G02B 5/20** (2006.01)  
**G02B 27/00** (2006.01)

(52) **U.S. Cl.**

CPC ..... **G02B 13/0045** (2013.01); **G02B 5/005**  
(2013.01); **G02B 5/20** (2013.01); **G02B 9/60**  
(2013.01); **G02B 27/0025** (2013.01)

(58) **Field of Classification Search**

CPC .. G02B 13/02; G02B 13/009; G02B 13/0045;  
G02B 5/005; G02B 5/20; G02B 27/0025;  
G02B 27/646; H04N 5/2254; H04N  
5/2257; H04N 5/2258; H04N 5/23296  
USPC ..... 359/659, 714, 753, 763  
See application file for complete search history.

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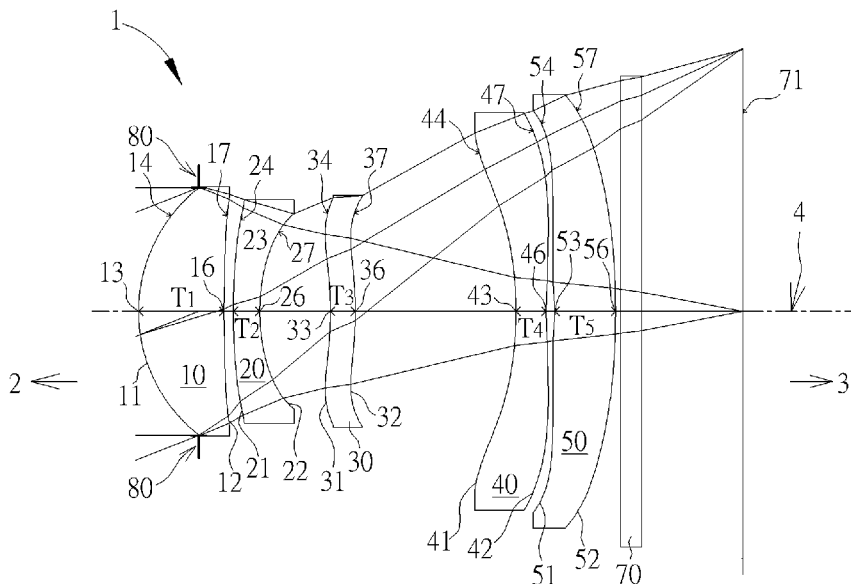
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(57) **ABSTRACT**

An optical lens assembly includes a first lens of a concave  
image surface near its periphery, a second lens of a plastic  
material, a third lens of a concave object surface near the  
optical-axis and a concave image surface near its periphery,  
a fourth lens of a concave object surface near the optical-  
axis, a fifth lens of a concave object surface near its  
periphery and a convex image surface near the optical-axis.

**18 Claims, 30 Drawing Sheets**



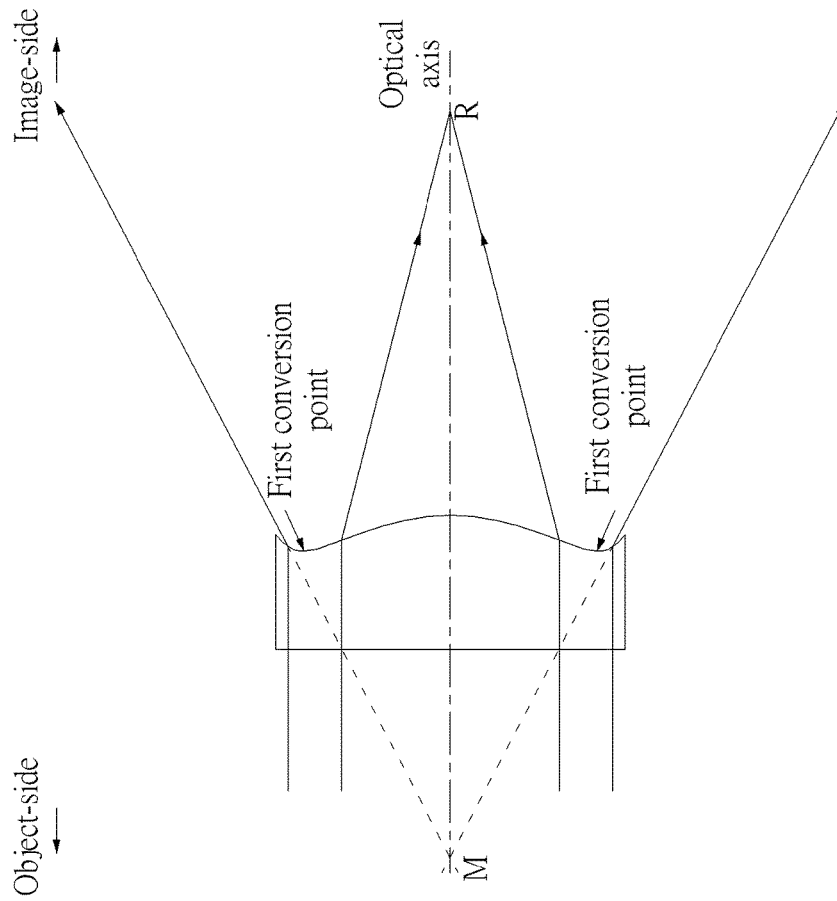


FIG. 2

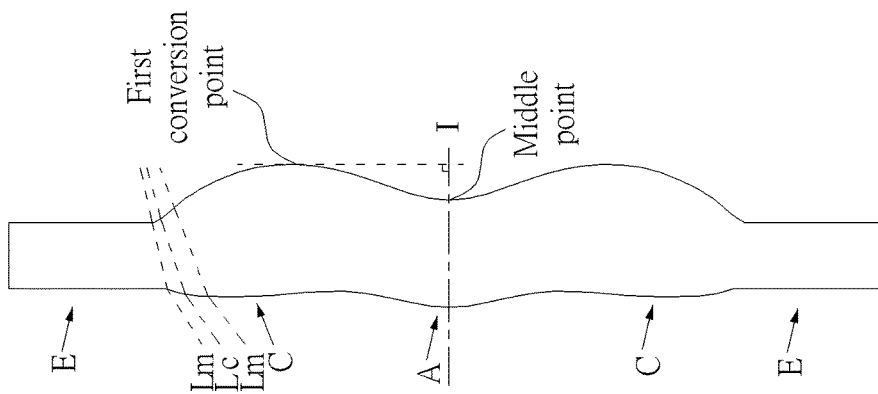


FIG. 1

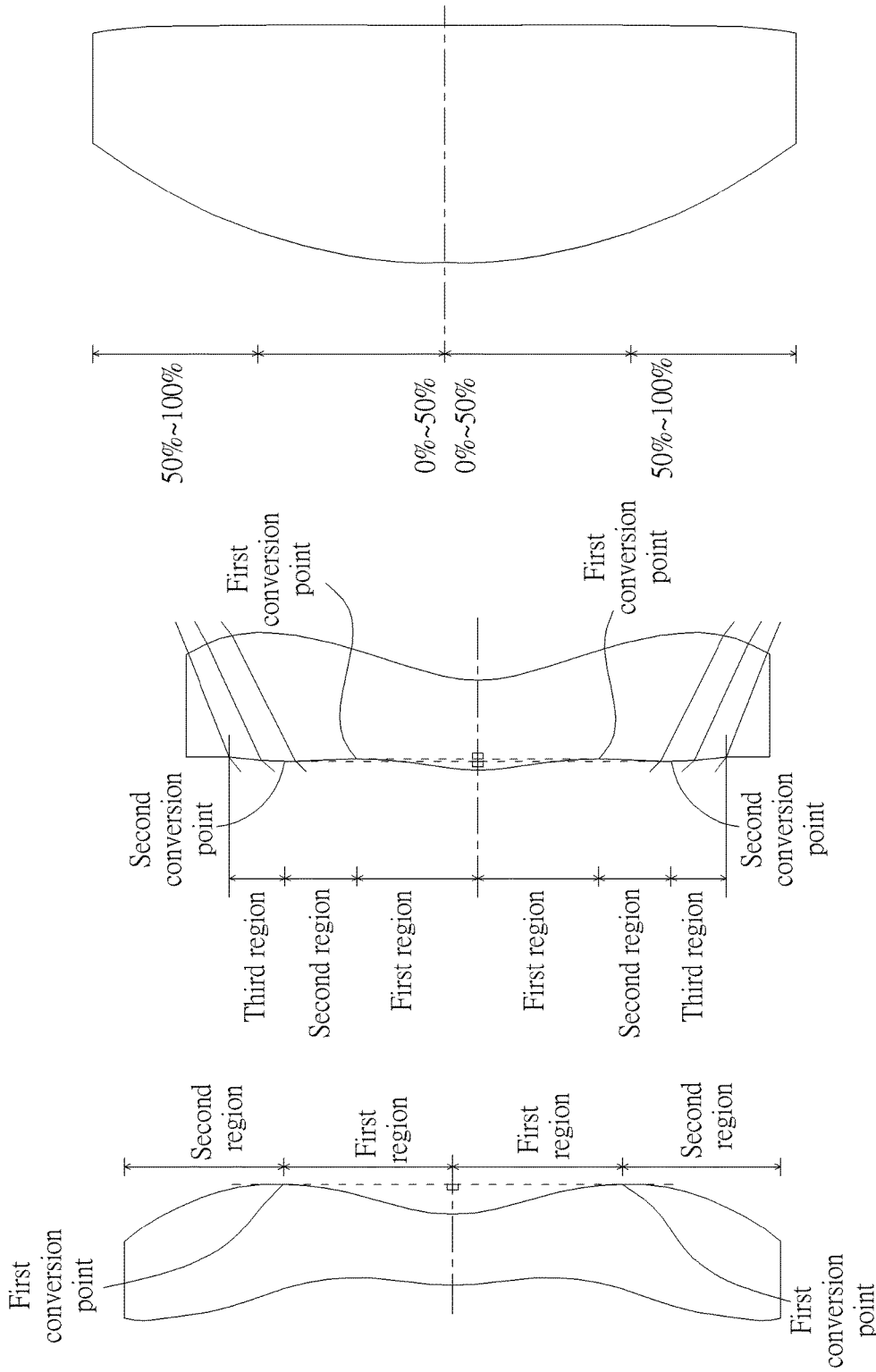


FIG. 5

FIG. 4

FIG. 3

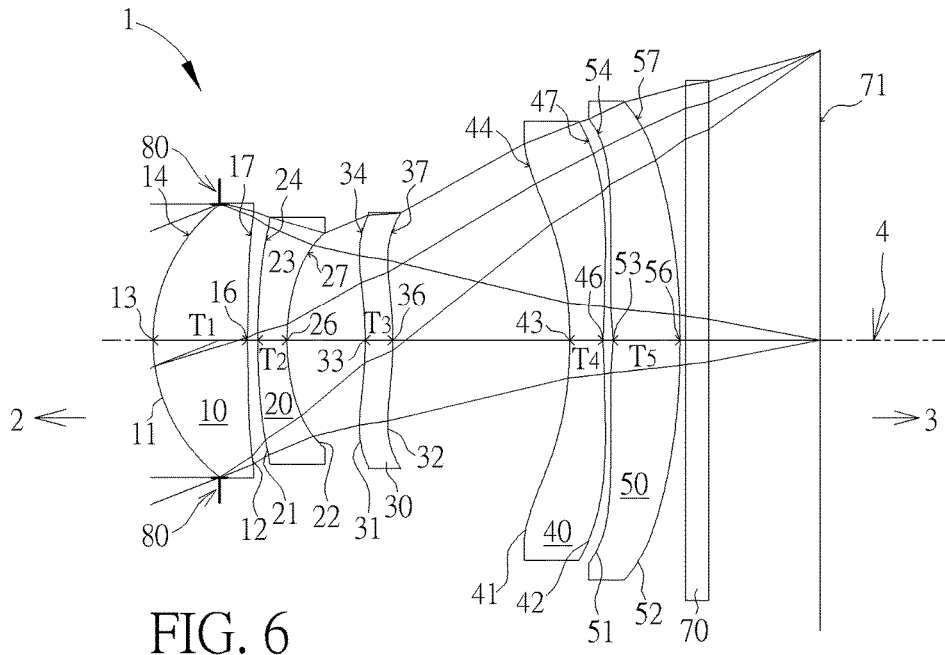


FIG. 6

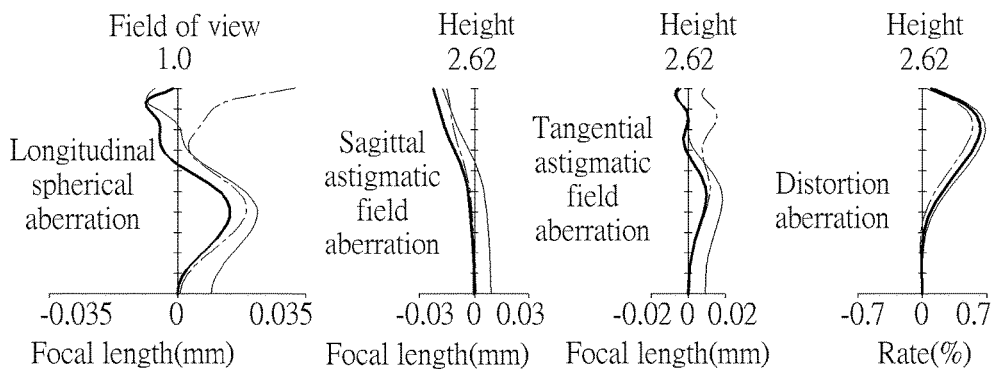
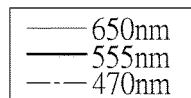


FIG. 7A

FIG. 7B

FIG. 7C

FIG. 7D

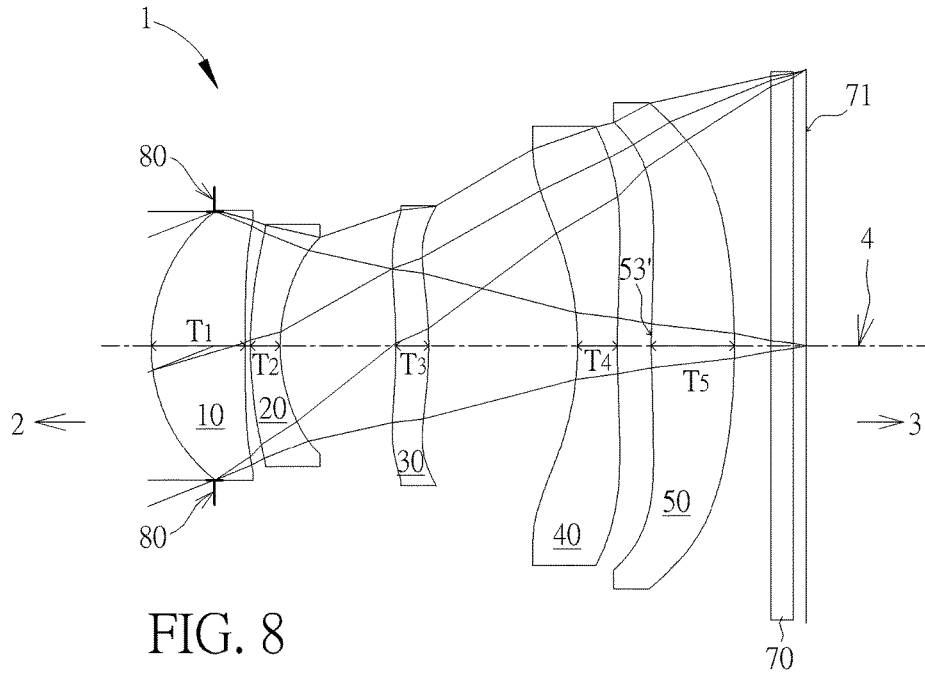


FIG. 8

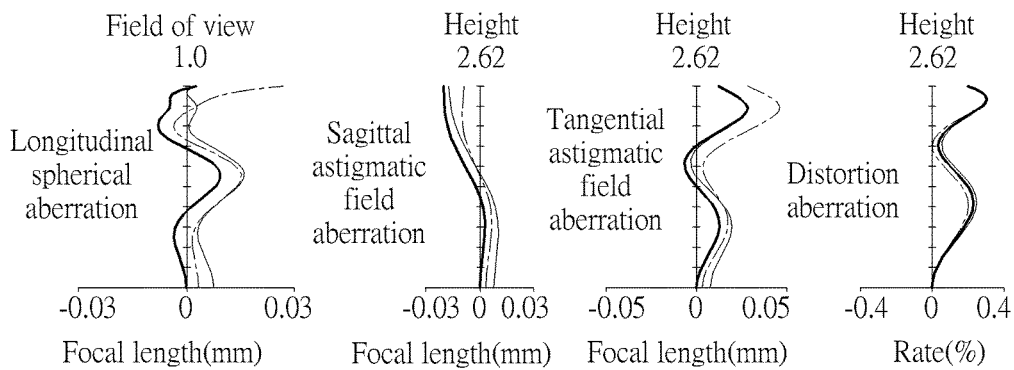
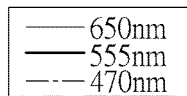


FIG. 9A

FIG. 9B

FIG. 9C

FIG. 9D

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