



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| (21) International Application Number: PCT/US98/10127<br>(22) International Filing Date: 19 May 1998 (19.05.98)<br><br>(30) Priority Data:<br>08/870,628 6 June 1997 (06.06.97) US<br><br>(71) Applicant: ALLIEDSIGNAL INC. [US/US]; 101 Columbia Road, P.O. Box 2245, Morristown, NJ 07962-2245 (US).<br>(72) Inventors: WROBEL, Leslie, P.; 12111 James Morrice, Montreal, Quebec H3M 2H2 (CA). ZIMMERMAN, Jerrold; 6 Turner Drive, Randolph, MA 02368 (US). KUNZ, Kenneth, M.; 30 Lakeshore Drive #1009, Pointe Claire, Quebec H9S 4H2 (CA).<br>(74) Agent: CRISS, Roger, H.; AlliedSignal Inc., Law Dept., Attn: R. Feis, 101 Columbia Road, P.O. Box 2245, Morristown, NJ 07962-2245 (US). |           | (81) Designated States: AU, CA, IL, NO, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).<br><br>Published<br>With international search report. |

(54) Title: FOCUS MECHANISM FOR VARIFOCAL LENS

## (57) Abstract

A device (10) for changing the focus and field of view magnification of an optical device having a two lens optical element (19, 21) which is movable grossly to change field of view and movable incrementally to change focus of the device (10) with either field of view includes an operator actuatable control system for varying incrementally the axial position of this optical element within each of the regions to focus the optical device in each field of view mode. The device (10) includes a control knob (31), a threaded shaft (33) coupled to the control knob (31), a pair of stop members (37, 39) engaging threadedly the threaded shaft, and a linkage (45, 53, 49, 63, 59, 55, 67, 69) for converting axial motion of a stop member along the threaded shaft to incremental movement of the movable optical element along the primary optical axis (29). The threaded shaft (33) has a right hand thread along a portion of the length thereof engaging threadedly one stop member (39) and a left hand thread along another portion of the length thereof engaging threadedly the other stop member (37) so that the direction or sense of control knob motion necessary to increase the focus distance is the same in each of the two magnification modes.

