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| <b>(51) International Patent Classification <sup>6</sup> :</b><br><b>G03B 21/10</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>A1</b> | <b>(11) International Publication Number:</b><br><b>WO 99/13378</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>(43) International Publication Date:</b><br><b>18 March 1999 (18.03.99)</b> |
| <b>(21) International Application Number:</b> PCT/US98/17209<br><b>(22) International Filing Date:</b> 19 August 1998 (19.08.98)<br><b>(30) Priority Data:</b><br>08/925,855                      9 September 1997 (09.09.97)                      US<br><b>(71) Applicant:</b> MINNESOTA MINING AND MANUFACTURING COMPANY [US/US]; 3M Center, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).<br><b>(72) Inventors:</b> BOYD, Gary, T.; P.O. Box 33427, Saint Paul, MN 55133-3427 (US). MILLER, William, D.; P.O. Box 33427, Saint Paul, MN 55133-3427 (US).<br><b>(74) Agents:</b> MILLER, William, D. et al.; Minnesota Mining and Manufacturing Company, Office of Intellectual Property Counsel, P.O. Box 33427, Saint Paul, MN 55133-3427 (US). |           | <b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i> |                                                                                |

(54) Title: REAR PROJECTION DISPLAY

**(57) Abstract**

A rear projection display which uses a polarization sensitive beam splitter (105) to fold the rear projection optical path. The folded light path facilitates a compact design which can be tiled vertically and horizontally. An image source produces an image having a polarization which is transmitted through the beam splitter (105). Light passing through the beam splitter is incident on a polarization state converter (107) which converts the polarization state of the image to one which is reflected by the polarization sensitive beam splitter. The converted image is reflected by the polarization sensitive beam splitter (105) towards a screen (109). The image can be transmitted through the screen (109) for viewing.

