



- (51) International Patent Classification:
G02B 27/12 (2006.01) G02B 27/01 (2006.01)
G02B 27/28 (2006.01)
- (21) International Application Number:
PCT/US2016/038659
- (22) International Filing Date:
22 June 2016 (22.06.2016)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/186,944 30 June 2015 (30.06.2015) US
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,

[Continued on next page]

(54) Title: POLARIZING BEAM SPLITTING SYSTEM

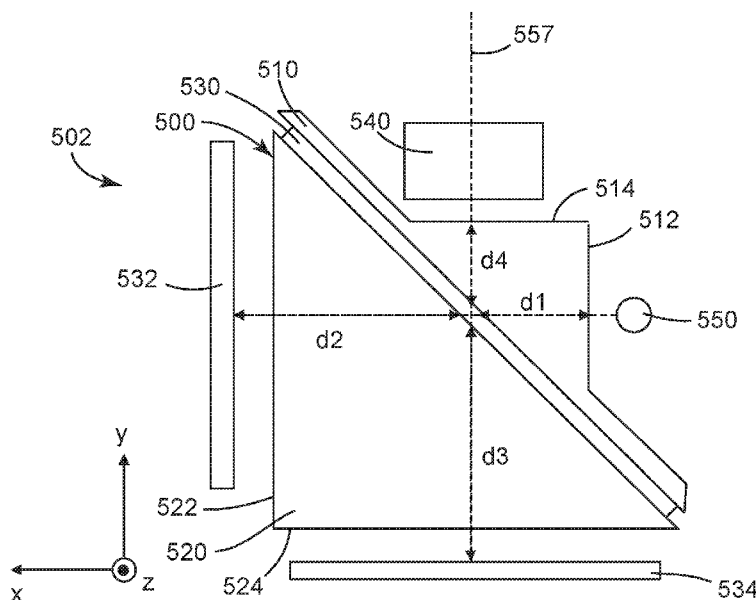


FIG. 5A

(57) Abstract: A polarizing beam splitting system is described. The polarizing beam splitting system may include first and second prisms where the volume of the first prism is no greater than half the volume of the second prism. The first prism includes first and second surfaces and a light source may be disposed adjacent the first surface and an image forming device may be disposed adjacent the second surface. The first prism has a first hypotenuse and the second prism has a second hypotenuse. A reflective polarizer is disposed between the first and second hypotenuses.





SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

(88) Date of publication of the international search report:

16 February 2017

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2016/038659

A. CLASSIFICATION OF SUBJECT MATTER
INV. G02B27/12 G02B27/28 G02B27/01
ADD.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
G02B
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/099507 A1 (THREE FIVE SYSTEMS INC [US]) 12 December 2002 (2002-12-12) abstract; figure 2 -----	1-8,14,15
A	US 2012/249970 A1 (ISHIMATSU RIE [JP]) 4 October 2012 (2012-10-04) paragraph [0032]; figures 15A, 15B -----	1-8
A	US 2010/195056 A1 (YOO JINN-CHOU [TW] ET AL) 5 August 2010 (2010-08-05) figures -----	1-8,14,15
A	WO 2013/083371 A1 (ASML NETHERLANDS BV [NL]) 13 June 2013 (2013-06-13) figure 8 -----	1-8
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 5 January 2017	Date of mailing of the international search report 18/01/2017
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Windecker, Robert
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2016/038659

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 539 578 A (TOGINO TAKAYOSHI [JP] ET AL) 23 July 1996 (1996-07-23) the whole document	1-8,14, 15
X	----- WO 2012/039895 A1 (3M INNOVATIVE PROPERTIES CO [US]; OUDERKIRK ANDREW J [SG]; YUN ZHISHEN) 29 March 2012 (2012-03-29) figure 1 page 5 - page 13	9-15
X	----- US 2014/176818 A1 (WATSON PHILIP E [US] ET AL) 26 June 2014 (2014-06-26) the whole document	9,12
A	----- US 2013/250415 A1 (GUPTA ANURAG [US]) 26 September 2013 (2013-09-26) the whole document	9,12

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2016/038659

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8(completely); 14, 15(partially)

A polarization beam splitting system with a reflective polarizer and with a first and a second prism each having a hypotenuse, wherein the volume of the first prism is no greater than half of the second volume.

2. claims: 9-13(completely); 14, 15(partially)

A polarization beam splitting system with a reflective polarizer and a first and second reflective component wherein the first reflective component is a tilted dichroic plate.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2016/038659

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 02099507	A1	12-12-2002	US 2002191297 A1 19-12-2002 WO 02099507 A1 12-12-2002
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