

Search history

Search 1: TAC=(retroreflector and method) and PD<20142011 and IC=(B29) (Results 32)

Title: METALLIZED CUBE CORNER RETROREFLECTIVE SHEETING HAVING A HIGH MEASURED DAYTIME LUMINANCE FACTOR

Abstract: Both a metallized cube corner retroreflective sheeting having a high measured daytime luminance factor and a **method** of manufacture thereof are provided. The sheeting is formed from a transparent planar sheet material including on one side a dense array of retroreflective cube comers having height H. The cube comers are canted edge-more-parallel by within about 1.5 degrees of 10n-9 degrees, where n is the index of refraction within the cube comers, and the cube comer faces are metallized by the application of a thin coating of reflective metal. The thickness of the sheet material between the bases of the cube comers and the opposite side of the sheeting is preferably between 1.75 H and 4.00 H. The resulting metallized, retroreflective sheet material may be mounted on a vehicle to increase its nighttime visibility through the ability of the sheet material to efficiently retroreflect a beam of light from a headlight or other source across a broad range of incident and orientation angles. Advantageously, the sheeting also reflects at least about 3.5 percent of normal and near normal light at angles within 5 degrees of 45 degrees obliquity, advantageously giving it a high measured daytime luminance factor as required by transportation regulations.

Classifications:

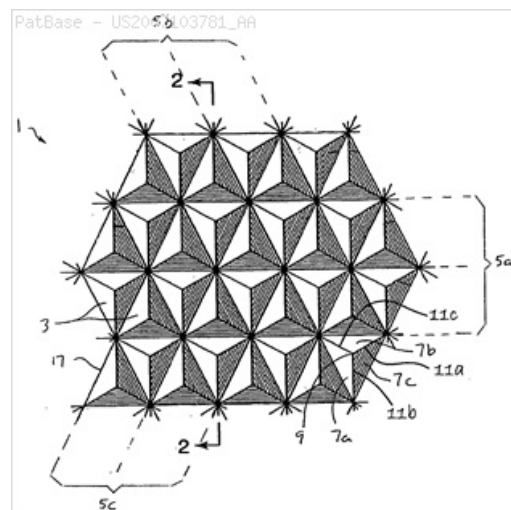
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International (IPC 1-7): G02B

CPC: Y10T428/2457 G02B5/124

European: G02B5/124

US: 359/529 359/530 359/900 428/167

**Family:**

Publication number	Publication date	Application number	Application date
AU2006208420 AA	20070524	AU20060208420	20060908
AU2011202205 AA	20110602	AU20110202205	20110512
AU2011202205 BB	20111020	AU20110202205	20110512
AU2011202205 CA	20120301	AU20110202205	20110512
BRPI0604546 A	20070828	BR2006PI04546	20061108
BRPI0604546 B1	20170307	BR2006PI04546	20061108
CN1963569 A	20070516	CN200610138622	20061108
CN1963569 B	20110323	CN200610138622	20061108
EP1785752 A1	20070516	EP20060023227	20061108
IN02003DE2006 A	20070824	IN2006DE02003	20060908
KR100936581 B1	20100113	KR20060089278	20060914
KR20070049954 A	20070514	KR20060089278	20060914
RU2006138679 A	20080510	RU20060138679	20061102
RU2380730 C2	20100127	RU20060138679	20061102
US2007103781 AA	20070510	US20050269903	20051109
US7445347 BB	20081104	US20050269903	20051109
ZA200608952 A	20090527	ZA20060008952	20061030

Priority:

US20050269903 20051109 AU20060208420 20060908 AU20110202205 20110512

Probable Assignee: AVERY DENNISON CORP

Assignee(s): (std): AVERY DENNISON CORP ; COUZIN DENNIS I

Assignee(s): EHVVERI DENNISON KORPOREJSHN

Inventor(s): (std): COUZIN DENNIS I ; DENNIS L COUZIN

Inventor(s): KUZIN DENNIS I. ; DENNIS I COUZIN ; COUZIN DENNIS

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; CALLINANS; PARK HEE JIN; ROBERTS MLOTKOWSKI AND HOBBS; ROBERTS MLOTKOWSKI SAFRAN AND COLE PC; COLE THOMAS W; THOMAS W

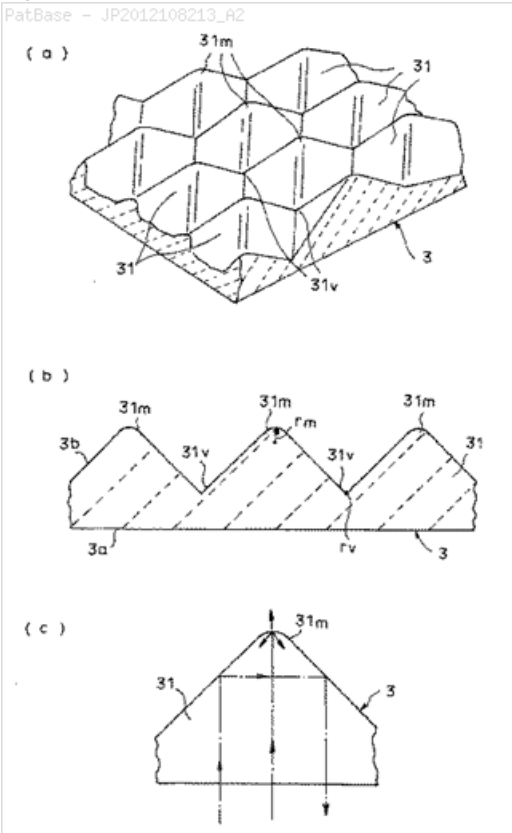
Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

Title: RETROREFLECTION MIRROR AND MANUFACTURING METHOD THEREOF

Abstract: PROBLEM TO BE SOLVED: To provide a retroreflection mirror in which dark portion formed in a mountain part of a retroreflection element is made to be a special shape so that the design of appearance is improved and a manufacturing method of the mirror.SOLUTION: In a retroreflection mirror 3 in which multiple retroreflection elements 31 are arranged, the curvature radius r_m of a mountain part 31m of the retroreflection elements 31 is made larger than the curvature radius r_v of a valley part 31v. Light entering the mountain part 31m is transmitted or reflected to a wide range so that a bold Y shaped dark pattern is created, thereby improving the design appearance of the retroreflection mirror.

Classifications:

International (IPC 8-9): B29C45/00 B29C45/37 B60Q1/30 F21S8/10
G02B5/10 G02B5/122 (Advanced/Invention);
B29L11/00 (Advanced/Non-invention)



Family:

Publication number	Publication date	Application number	Application date
CN102466831 A	20120523	CN201110342162	20111103
CN102466831 B	20150805	CN201110342162	20111103
JP2012108213 A2	20120607	JP20100255445	20101116

Priority:

JP20100255445 20101116

Probable Assignee:

KOITO MFG CO LTD

Assignee(s): (std):

KOITO K K ; KOITO MFG CO LTD

Inventor(s): (std):

TSUNEHA SUSUMU ; YEJIN CHANG

Inventor(s):

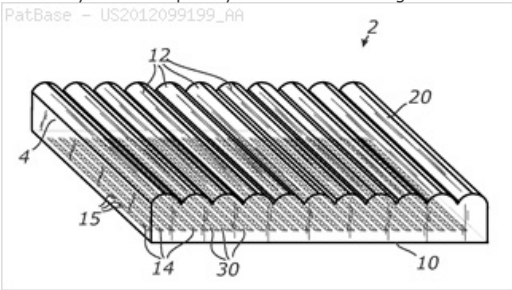
CHANG YEJIN

Title: RETROREFLECTIVE LENTICULAR ARRAYS

Abstract: Retroreflective lenticular systems employing a focusing array and a **retroreflector** array optically coupled to the focusing array. The focusing array is provided on a first surface and the **retroreflector** array is provided on an opposing second surface. The **retroreflector** array includes an array of retroreflective elements alternating with separation areas and disposed in energy exchange relationship with respect to the focusing array. The focusing array includes a plurality of focusing lenses configured to illuminate only the retroreflective elements with focused beams at least at some angles and to focus the incident beam only onto the separation areas at other angles. The intermittent illumination of retroreflective elements provides variable retroreflectivity of at least portions of the system and enhances the system visibility and conspicuity in the reflected light.

Classifications:

International (IPC 8-9): B29D11/00 B32B37/00 G02B5/12 G02B5/124 (Advanced/Invention)
CPC: G02B5/12 B29D11/00278 B29D11/00605 G02B5/124 Y10T156/10
European: B29D11/00C6 B29D11/00E G02B5/124
US: 156/60 156/60S 359/530 359/530P 427/162 427/162S



Family:

Publication number	Publication date	Application number	Application date
US2012099199 AA	20120426	US20110279278	20111022
US9010945 BB	20150421	US20110279278	20111022

Priority:

US20100455578P 20101022 US20110279278 20111022

Probable Assignee: SVV TECHNOLOGY INNOVATIONS INC DBA LUCENT OPTICS

Assignee(s): (std): SVV TECHNOLOGY INNOVATIONS INC ; VASYLYEV SERGIY VICTOROVICH

Assignee(s): SVV TECHNOLOGY INNOVATIONS INC DBA LUCENT OPTICS

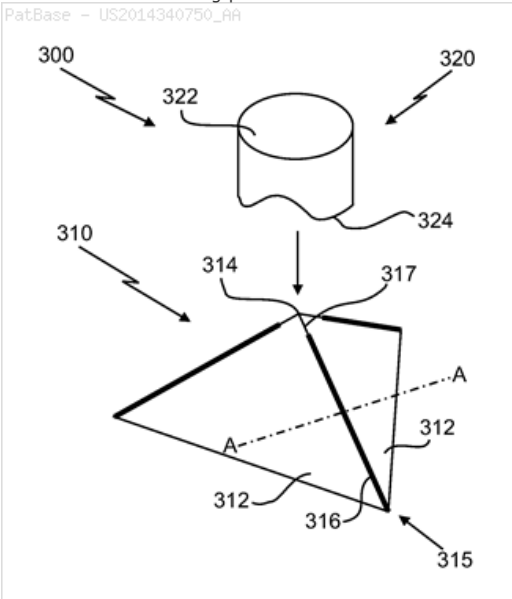
Inventor(s): (std): VASYLYEV SERGIY VICTOROVICH

Title: CUBE CORNER **RETROREFLECTOR** FOR MEASURING SIX DEGREES OF FREEDOM

Abstract: A target and **method** of manufacturing the target is provided. The **method** of manufacturing includes providing the cube cornered **retroreflector**, the cube cornered **retroreflector** including a first, second and third planar reflectors. Each planar reflector capable of reflecting light, each planar reflector perpendicular to the other two planar reflectors, each planar reflector intersecting the other two planar reflectors in a common vertex, and each planar reflector having two intersection junctions. Each intersection junction shared with an adjacent planar reflector for a total of three intersection junctions within the cube corner **retroreflector**. The **method** further including the step of directing ions from a focused ion beam etching (FIBE) device onto the first intersection junction defined by the first planar reflector and second planar reflector. A first material is removed from at least a first portion of the first intersection junction to define a first non-reflecting portion.

Classifications:

International (IPC 8-9): B29D11/00 B32B37/12 B32B37/18
G02B5/122 (Advanced/Invention)
CPC: G02B5/122 B32B37/18 B32B37/12 B29D11/00701 B32B2305/22
B32B2307/416 B32B2307/408 B32B2551/08 B29L2011/0075
US: 156/292 216/24 264/400 359/529



Family:

Publication number	Publication date	Application number	Application date
US2014340750 AA	20141120	US20140257263	20140421

Priority:

US20110442452P 20110214 US20120370339 20120210 US20140923928P 20140106
US20140257263 20140421

Probable Assignee: FARO TECHNOLOGIES INC

Assignee(s): (std): FARO TECH INC

Assignee(s): FARO TECHNOLOGIES INC

Inventor(s): (std): BROWN LAWRENCE B ; CRAMER PETER G ; DAY JONATHAN ROBERT ; MAVRODIN AURELIAN ; NEAL ROBERT MARK ; EVANS MATTHEW FREDERICK

Title: **METHOD** FOR MANUFACTURING MASTER MOLD FOR PRODUCTION RETRO-REFLECTOR

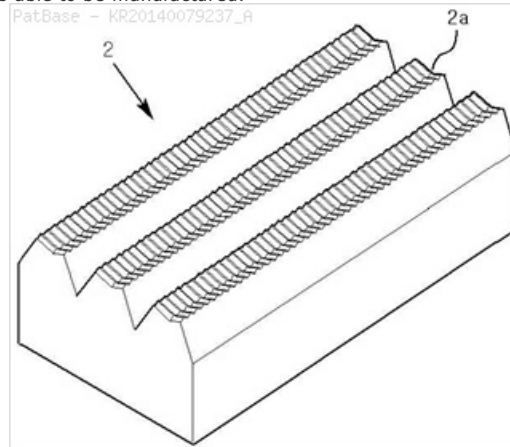
Abstract: The present invention relates to a master mold manufacturing **method** for retro-reflector manufacture comprising: a first thin plate assembly step of laminating and combining multiple thin plates in which both sides are parallel while obliquely inclining the multiple thin plate at a constant angle; a reflective corner process step of forming reflective corners with a corner angle of about 90 degrees on an upper side of a thin plate assembly combined in the first thin plate assembly step in a direction crossing the thin plates; a second thin plate assembly step of recombining the thin plates by standing the thin plates vertically after disassembling the thin plate assembly and turning thin plates of an odd number turn or even number turn; and a groove process step of forming a V-shaped groove in which both sides thereof are in contact with each corner of the reflective corners at an angle of about 90 degrees. Accordingly, the manufacturing **method** of the present invention is able to easily mass-produce a step prism shape retro-reflector with a high retroreflection efficiency and a sharply expanded retroreflection region since a retro-reflector master mold having a curve structure of up and down direction is able to be manufactured.

Classifications:

International (IPC 8-9): B29C33/38 B29C33/42

G02B5/12 (Advanced/Invention)

CPC: B29C33/42 B29C33/38 G02B5/12 B29D11/00625 B29C33/424



Family:

Publication number	Publication date	Application number	Application date
 KR20140079237 A	20140626	KR20120148977	20121218

Priority:

KR20120148977 20121218

Probable Assignee:

KIM HYEON SIK

Assignee(s): (std):

KIM HYEON SIK

Inventor(s): (std):

KIM HYEON SIK

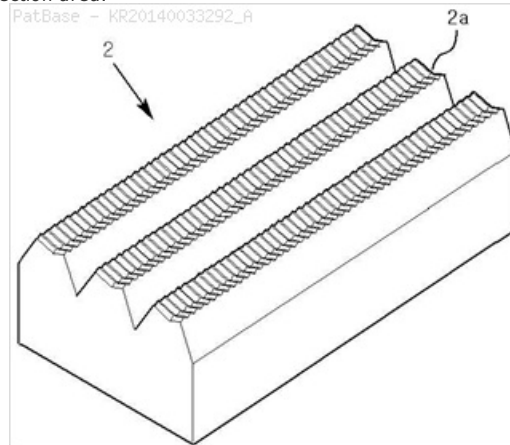
Title: **METHOD** FOR MANUFACTURING MASTER MOLD FOR PRODUCTION RETRO-REFLECTOR

Abstract: The present invention relates to a **method** of manufacturing a master mold for retro-reflector production comprising: a first sheet assembly step of uniting multiple sheets in which both sides are parallel by overlapping the multiple sheets while tilting the multiple sheets at a constant angle; a reflection corner process step of forming reflection corners with the corner angle of about 90 degree on the upper side of a sheet assembly assemble in the first sheet assembly step in a direction crossing the sheets; a second sheet assembly step of disassembling the sheet assembly and re-uniting sheets by making the sheets vertically stand after turning the sheets of even number turns or odd number turns; and a groove process step of forming a V-shape groove contact with each edge of the reflection corner at the angle of 90 degree along a mountain formed on the upper side of the sheet assembly after the second sheet assembly step. The **method** of the present invention is able to produce a step prism type retro-reflector which has high retro-reflection efficiency since retro-reflector master mold having a curved structure of an upper direction is able to be manufactured and which extends a retro-reflection area.

Classifications:

International (IPC 8-9): B29C33/42 B29D7/00 (Advanced/Invention)

CPC: B29D7/00 B29C33/42



Family:

Publication number	Publication date	Application number	Application date
 KR20140033292 A	20140318	KR20120099643	20120908

Priority:

KR20120099643 20120908

Probable Assignee:

KIM HYEON SIK

Assignee(s): (std):

KIM HYEON SIK

Inventor(s): (std):

KIM HYEON SIK

Title: RETROREFLECTIVE ARTICLES HAVING MICROCUBES, AND TOOLS AND **METHODS** FOR FORMING MICROCUBES

Abstract: A **method** for tooling a pattern of retroreflective microcubes, which pattern can be subdivided into smaller increments within which there are straight line tooling paths, none of which pass through an otherwise solid part of the incremental pattern. The tooling paths within the various increments need not be parallel to a common plane. Various adaptations of the **method** enable the tooling of a number of specific microcube shapes and for modifying such optical properties of the microcubes as entrance angularity, incidence angularity, orientation angularity, observation angularity, percent active aperture and retroreflectance. Specific techniques govern the pre-selection of cube parameters such as cube axis cant, cube apex decentration, and cube boundary proportions, which parameters can be adjusted independently of each other. Designs tooled by the **method** can have 100 percent active aperture at near zero degrees entrance angle. The **method** involves providing a plurality of plates of micro thickness, each plate having at least one end comprised of a material that can be tooled with polished surfaces by means of an appropriate tool, tooling on said end of each plate an increment of the pattern, and assembling the plates together in various ways to form a master. Retroreflective articles made by means of this technique are expected to provide superior performance when used in pavement markers, highway signs and other applications.

Classifications:

International (IPC 8-9): A01K1/015 B23C3/28 B23C5/02 B23P13/04 B29B9/00 B29C33/30 B29C33/38 B29C33/42 B29C39/00 B29C43/00 B29D11/00 B32B3/00 E01F9/00 E01F9/06 G02B5/122 G02B5/124 G02B5/136 (Advanced/Invention); B29C33/30 B29C33/38 B29C39/00 B29C43/00 B32B3/00 G02B5/122 (Advanced/Non-invention);

A01K1/015 B29C33/42 B29D11/00 B32B3/00 E01F9/00 E01F9/04 G02B5/12 (Core/Invention); B29C33/30 B29C33/38 B29C39/00 B29C43/00 (Core/Non-invention)

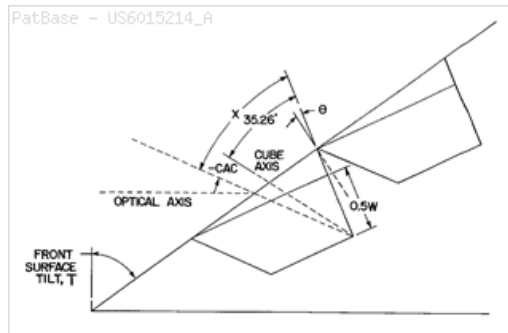
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CPC: Y10T428/24612 G02B5/124 B29C33/301 B29C33/3842 B29C33/42 B29C39/00 B29C43/00 B29C2059/023 B29D11/00605 B29L2011/0091 Y10T428/249921

European: B29C33/42 B29D11/00E G02B5/124 L29C33/30B L29C33/38M L29C39/00 L29C43/00 L29C59/02C1 L29L11/00G2

US: 359/529 359/530 428/172 428/221

PatBase - US6015214_A



Family:

Publication number	Publication date	Application number	Application date
AU199732858 A1	19980105	AU19970032858	19970522
AU730149 B2	20010301	AU19970032858	19970522
BRPI9710684 A	20000111	BR1997PI10684	19970522
CA2256315 AA	19981127	CA19972256315	19970522
CA2256315 C	20070116	CA19972256315	19970522
CN1226853 A	19990825	CN19971096930	19970522
EP0951383 A1	19991027	EP19970928656	19970522
EP0951383 A4	20010530	EP19970928656	19970522
EP2246182 A2	20101103	EP20100166036	19970522
EP2246182 A3	20130109	EP20100166036	19970522
KR100498822 B1	20051123	KR19980709739	19981130
KR20000016171 A	20000325	KR19980709739	19970522
US6015214 A	20000118	US19960655595	19960530
US6767102 BA	20040727	US19990453327	19991202
USRE40455 E	20080812	US20060515509	20060831
USRE40700 E	20090414	US20060514326	20060830
WO9745255 A1	19971204	WO1997US08806	19970522

Priority:

US19960655595 19960530	EP19970928656 19970522	WO1997US08806 19970522
EP19970928656 19971204	KR19980709739 19981130	US19990453327 19991202
US20060514326 20060830	US20060515509 20060831	

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Assignee(s): (std): AVERY DENNISON CORP ; STIMSONITE CORP

Assignee(s): MONTALBANO ANTHONY J ; HEENAN SIDNEY A ; COMAN LIVIU A ; COUZIN DENNIS I

Inventor(s): (std): COMAN L A ; COMAN LIVIU A ; COMAN REVIEW A ; COUZIN DENNIS I ; CUSIN DENIS I ; HEENAN S A ; HEENAN SIDNEY A ; HINNAN SYDNEY A ; MONTALBANO A J ; MONTALBANO ANTHONY A ; MONTALBANO ANTHONY J ; SIDNEY A HEENAN ; S A HEENAN ; LIVIU A COMAN ; L A COMAN ; DENNIS I COUZIN ; ANTHONY J MONTALBANO ; A J MONTALBANO

Inventor(s): ANTHONY A MONTALBANO

Agent(s): PHILLIPS ORMONDE FITZPATRICK; CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; HOOVELD ARJEN JAN WINFRIED; CHRISTIE PARKER AND HALE LLP

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CZ DE DK EE ES FI FR GA GB GE GH GN GR HU IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TM TR TT UA UG UZ VN YU

Title: RETROREFLECTIVE ARTICLE

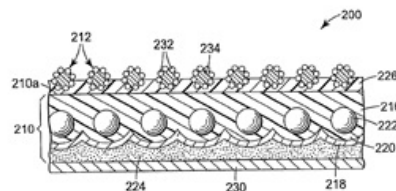
Abstract: A retroreflective article that exhibits suitable retroreflective luminance under dry and dynamic wet conditions. The article includes an enclosed-lens retroreflective sheeting that, under dry conditions, exhibits a coefficient of retroreflective luminance of about 40 (millicandela/m²)/lux as measured by ASTM D 4061-94 and, under dynamic wet conditions the sheeting increases in coefficient of retroreflective luminance. The article further includes a plurality of retroreflective elements partially embedded in a light transmissible bonding layer on the front, reflective surface of the retroreflective sheeting.

Classifications:

International (ipc 8-9): E01F15/08 E01F9/00 E01F9/015 E01F9/03 E01F9/04 E01F9/08 E01F9/50 E01F9/524 E01F9/619 E01F9/669 G02B5/12 G02B5/124 G02B5/128 G02B5/13 G02B5/136 (Advanced/Invention); E01F9/00 E01F9/015 E01F9/04 G02B5/12 (Advanced/Non-invention); E01F9/00 E01F9/011 E01F9/04 G02B5/12 (Core/Invention); G02B5/136 (Core/Non-invention); B32B B60R E01F E04H (Subclass/Invention)
International (ipc 1-7): A01N027/00 A01N037/02 A01N065/00 B29D11/00 B32B1/00 B32B3/00 B32B5/16 E01F9/00 E01F9/015 E01F9/03 E01F9/04 E01F9/08 E01F9/15 G02B5/12 G02B5/122 G02B5/124 G02B5/128 G02B5/13 G02B5/136
CPC: Y10S264/78 Y10S428/913 Y10T428/24355 Y10T428/24372 Y10T428/24421 Y10T428/24479 Y10T428/24521 Y10T428/24529 Y10T428/24537 Y10T428/24562 Y10T428/252 Y10T428/28 Y10T156/1002 Y10T156/1028 Y10T156/103 Y10T428/24579 Y10T428/24587 Y10T428/24612 Y10T428/24802 E01F9/512 E01F9/524 E01F9/619 E01F9/669 G02B5/124 G02B5/128 E01F15/083
European: E01F15/08M2 E01F9/015 E01F9/03 E01F9/04B2 E01F9/04B3 G02B5/124 G02B5/128 S02B5/128
US: 116/63R 156/196 156/212 156/213 264/1.38 264/1.9 264/138 264/19 264/2.7 264/27 264/571 264/DIG.78 329/529 329/531 329/532 329/533 329/534 329/537 359/529 359/530 359/531 359/532 359/533 359/534 359/536 359/537 359/539 359/542 404/12 404/14 404/16 404/6 404/82 404/9 427/137 427/163.4 428/141 428/141P 428/143 428/149 428/156 428/161 428/162 428/163 428/166 428/168 428/169 428/172 428/195 428/195.1 428/220 428/325 428/343 428/913

PatBase - US2002090492_AA

Patent Application Publication Jul. 11, 2002 US 2002/0090492 A1

**Fig. 1****Family:**

Publication number	Publication date	Application number	Application date
AR002643 AA	19980325	AR19960103380	19960628
AR002644 AA	19980325	AR19960103381	19960628
AR2643 A1	19980325	AR19960337277	19960628
AR2644 A1	19980325	AR19960337278	19960628
AT184939 E	19991015	AT19960923474T	19960627
AT184940 E	19991015	AT19960922609T	19960627
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AT318415 E	20060315	AT19990942067T	19990810
AU199663425 A1	19970130	AU19960063425	19960627
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NO975444 A0	19971126	NO19970005444	19971126
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WO9701673 A1	19970116	WO1996US10955	19960627
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WO9701677 A1	19970116	WO1996US11036	19960627
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WO9701679 A1	19970116	WO1996US11055	19960627
ZA9605382 A	19971225	ZA19960005382	19960625
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Priority:

US19950000706	19950629	US19950000708	19950629	US19950000707	19950629
US19950000706P	19950629	US19950000707P	19950629	US19950000708P	19950629
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WO1996US11055	19960627	WO1996US11045	19960627	US19980183831	19981030
US19990285349	19990402	US19990307114	19990507	JP20000609820	19990810
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Probable Assignee: 3M CO

Assignee(s): (std): 3M CO ; 3M INNOVATIVE PROPERTIES CO ; MINNESOTA MINING AND MFG CORP ; THREE M INNOVATIVE PROPERTIES ; MINNESOTA MINING AND MFG ; STUMP LARRY K

Assignee(s): MINNESOTA MINING AND MFG CO ; MINNESOTA MINING AND MFG CO SAINT PAUL ; JACOBS GREGORY F ; SCHUELER DAVID G ; BRADSHAW THOMAS I ; GUTHRIE SHARON RA ; MINNESOTA MINING AND MANUFACTURING COUS ; ZENDER MARK D ; THREE M INNOVATIVE PROPERTIES CO ; HAUNSCHILD DALE H ; HAENGGI ROBERT A ; ETHEN JOHN L ; 3M INNOVATIVE PROPERTIES CO ST PAUL ; BACON CHESTER A JR ; BAILEY TERRY R ; BELISLE LOUIS C ; BELISLE LOUIS C DECEASED

Inventor(s): (std): BACON CHESTER A ; BACON CHESTER A JR ; BACON JR CHESTER A ; BAILEY TERRY ; BAILEY TERRY R ; BAILEY TERRY RALPH ; BELISLE LOUIS ; BELISLE LOUIS C ; BELISLE LOUIS C DECEASED ; BELISLE LOUIS CLEMENT ; BELISLE LOUISE CLEMENT ; BRADSHAW T IAN ; BRADSHAW THOMAS I ; BRADSHAW THOMAS IAN ; CHESTER A BACON JR ; ETHEN J L ; ETHEN JOHN L ; ETHEN L ; FRANK JOHN W ; GREGORY F JACOBS ; GREGORY FRANCIS JACOBS ; HAENGGI A ; HAENGGI ROBERT A ; HAUNSCHILD D H ; HAUNSCHILD DALE ; HAUNSCHILD DALE H ; HAUNSCHILD DALE HARLAN ; HAUNSCHILD H ; HAUSCHILD DALE H ; DALE H HAUNSCHILD ; DALE H HAUSCHILD ; JACOBS GREGORY ; JACOBS GREGORY F ; JACOBS GREGORY FRANCIS ; DAVID G SCHUELER ; DAVID GEORGE SCHUELER ; JOHN L ETHEN ; KELLEY MICHELE H ; LARRY K STUMP ; NAKAYAMA NAOKI ; NGUYEN THANH HUONG THI ; ROBERT A HAENGGI ; SCHUELER DAVE G ; SCHUELER DAVID ; SCHUELER DAVID G ; SCHUELER DAVID GEORGE ; STUMP K ; STUMP LARRY ; STUMP LARRY K ; STUMP LARRY KENNETH ; TERRY R BAILEY ; LOUIS C BELISLE ; LOUIS CLEMENT BELISLE ; MARK D ZENDER ; THOMAS I BRADSHAW ; WILSON BRUCE B ; ZENDER D ; ZENDER M D ; ZENDER MARK D ; STUMP LARRY E ; DALE HARLAN HAUNSCHILO

Inventor(s): BRADSHAW THOMAS ; BACON JR CHESTER ARTHUR ; BACON CHESTER ; LARRY E STUMP ; THOMAS IAN BRADSHAW ; MD ZENDER ; LOUISE CLEMENT BELISLE ; M D ZENDER ; TERRY RALPH BAILEY ; LARRY KENNETH STUMP ; JR CHESTER ARTHUR BACON ; DH HAUNSCHILD ; JL ETHEN ; DALE HARLAN HAUNSCHILD ; J L ETHEN ; D H HAUNSCHILD

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; SMART AND BIGGAR; NISHIYAMA MASAYA; ISHIDA TAKASHI; TSURUTA JUNICHI; HIGUCHI SOTOJI; FUKUMOTO TSUMORU

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG UZ VN YU ZA ZW

Title: MOULD COMPRISING TWO INTERNAL CORNER-CUBES AND COMPONENT COMPRISING CUBOID ELEMENTS FORMING TWO INTERNAL CORNER-CUBES

Abstract: The invention provides a mould (80) comprising first (82), second (84) and third (86) cuboid moulds elements, each having a pair of adjacent rectangular faces which are planar and polished flat and which intersect at 270 degrees to a high tolerance. Each mould element has a length dimension substantially twice its width dimension so that the mould elements may be arranged to form two accurate internal corner-cubes having flat, planar surfaces suitable for moulding. The apexes of the two internal corner-cubes are co-located. Pairs of adjacent mould elements are clamped in contact with each other by means of bolts (88) and washers (89). The mould may be used to produce a component having a very accurate solid corner-cube, whilst the mould elements themselves are relatively simple to fabricate because each is required to have only a pair of adjacent rectangular surfaces which are flat and planar and which intersect at 270 degrees to a high tolerance.

Classifications:

International (IPC 8-9): B28B1/14 B28B7/36 B29C33/30 B29D11/00

C03B11/06 C03B11/08 C03B23/20 G02B5/122 (Advanced/Invention);

B29C33/30 C03B11/06 G02B5/12 (Core/Invention)

CPC: B29C33/301 C03B11/08 C03B23/20 C03B2215/03 C03B2215/40

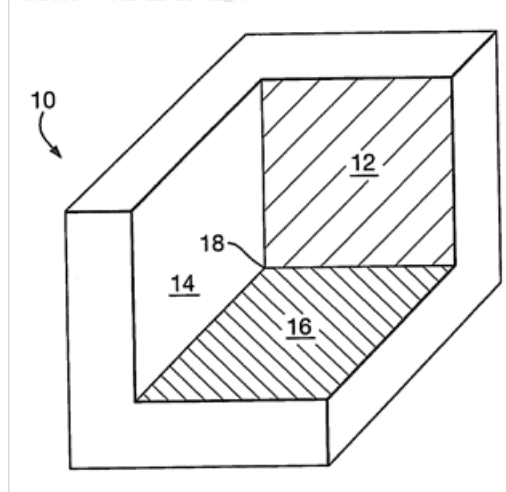
C03B2215/41 C03B2215/50 G02B5/122 C03B11/06

European: B29C33/30B C03B11/08 C03B23/20 G02B5/122 M03B215/03

M03B215/40 M03B215/41 M03B215/50

US: 249/114.1 249/114.100S 264/2.6 264/2.600P 264/299 264/299S

PatBase - US2012013031_AA



Family:

Publication number	Publication date	Application number	Application date
GB200715632 A0	20070919	GB20070015632	20070810
GB201002201 A0	20100331	GB20100002201	20080804
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US2012013031 AA	20120119	US20080672804	20080804
WO09022099 A1	20090219	WO2008GB02658	20080804

Priority:

GB20070015632 20070810 WO2008GB02658 20080804

Probable Assignee: QINETIQ LTD

Assignee(s): (std): MASON PAUL DAVID ; ORCHARD DAVID ARTHUR ; QINETIQ LTD ; SCOTT ANDREW MAXWELL

Assignee(s): QINETIQ LIMITED

Inventor(s): (std): ORCHARD DAVID ARTHUR ; MASON PAUL DAVID ; SCOTT ANDREW MAXWELL

Inventor(s): PAUL DAVID MASON ; DAVID ARTHUR ORCHARD ; ANDREW MAXWELL SCOTT

Agent(s): YELLAND CARL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: PATTERNED SHEETING WITH PERIODIC ROTATED PATTERNED REGIONS

Abstract: In one embodiment of the invention, retro-reflective sheeting is disclosed. The retro-reflective sheeting comprises a flexible optical material film or substrate having a geometric optical surface opposite a base surface. The geometric optical surface includes a background pattern region of corner cubes arranged at a first orientation with respect to an edge of the retro-reflective sheeting; and an array of circular corner cube regions periodically interrupting the background pattern region of corner cubes. Each of the circular corner cube regions has a second orientation with respect to the edge of the retro-reflective sheeting. The array of the plurality of circular corner cube regions reflects incident light differently than the background pattern region of corner cubes.

Classifications:

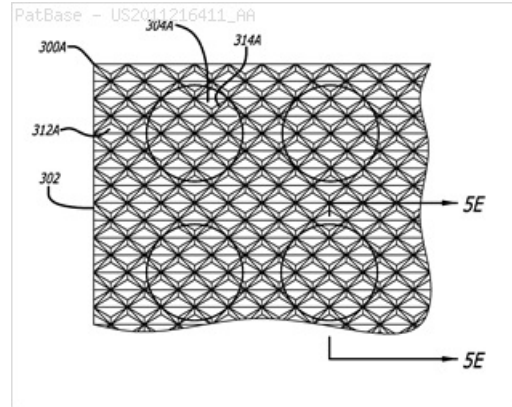
International (IPC 8-9): B29C33/30 B29C33/34 B29C59/02 B29D11/00 B29L11/00 G02B5/12 G02B5/122 G02B5/124 (Advanced/Invention);

B29L11/00 (Advanced/Non-invention)

CPC: B29D11/00605 G02B5/124

European: B29D11/00E G02B5/124

US: 264/293 264/293S 359/530 359/530P 425/385 425/385S



Family:

Publication number	Publication date	Application number	Application date
CN102213783 A	20111012	CN201110059591	20110304
CN102248671 A	20111123	CN201110060942	20110307
TW201200327 A	20120101	TW20110107427	20110304
TW201200915 A	20120101	TW20110107429	20110304
US2011216411 AA	20110908	US20110040044	20110303
US2011216412 AA	20110908	US20110040250	20110303
WO11109666 A2	20110909	WO2011US27100	20110304
WO11109666 A3	20120119	WO2011US27100	20110304
WO11109667 A2	20110909	WO2011US27101	20110304
WO11109667 A3	20120112	WO2011US27101	20110304

Priority:

US20100311088P 20100305 US20110040044 20110303 US20110040250 20110303

Probable Assignee: ORAFOL EUROPE GMBH

Assignee(s): (std): NELSON JOHN ; ORAFOL EUROP GMBH ; REED DAVID

Assignee(s): ORAFOL EUROPE GMBH

Inventor(s): (std): DAVID REED ; JOHN NELSON ; NELSON JOHN ; REED DAVID

Agent(s): ALFORD WILLIAM

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: CUBE CORNER **RETROREFLECTOR** WITH LIMITED RANGE

Abstract: Retroreflective articles having cube corner elements are disclosed, with the dihedral angle errors of the cube corner elements selected to limit the visibility range of the retroreflective article. Also disclosed are **methods** for making the cube corner elements and the retroreflective articles.

Classifications:

International (IPC 8-9): B29C45/37 B29D11/00 E01F9/06 G02B5/122
G02B5/124 (Advanced/Invention)

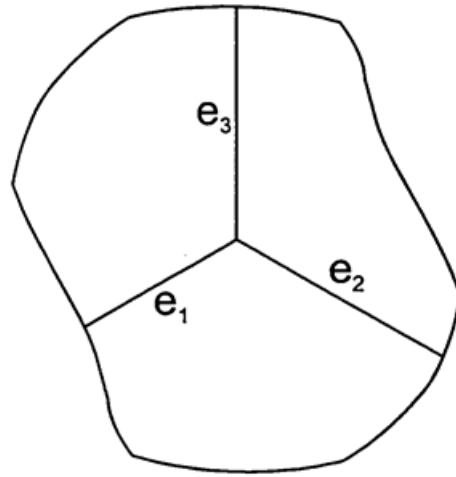
International (IPC 1-7): B29D11/00 E01F9/06 G02B5/122

CPC: G02B5/122 Y10S425/808

European: G02B5/122

US: 264/1.9 264/2.5 264/2.500P 359/529 359/529P 359/530 359/530S
425/175 425/555 425/555S 425/808

PatBase - US2005141092_AA



Family:

Publication number	Publication date	Application number	Application date
US2005141092 AA	20050630	US20040018828	20041221
US2007258142 AA	20071108	US20070825227	20070705
US2008211120 AA	20080904	US20080040722	20080229
US7370981 BB	20080513	US20040018828	20041221
US7513629 BB	20090407	US20070825227	20070705
US7959427 BB	20110614	US20080040722	20080229
WO05066665 A1	20050721	WO2004US43209	20041221

Priority:

US20030532496P 20031224 US20040018828 20041221 US20070825227 20070705
US20080040722 20080229

Probable Assignee: AVERY DENNISON CORP

Assignee(s): (std): AVERY DENNISON CORP ; COUZIN DENNIS I

Inventor(s): (std): COUZIN DENNIS I

Inventor(s): COUZIN DENNIS

Agent(s): CALFEE HALTER AND GRISWOLD LLP; ROBERTS MLOTKOWSKI SAFRAN AND COLE PC; ROBERTS MLOTKOWSKI AND HOBBS; COLE THOMAS W; THOMAS W

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: **RETROREFLECTOR** WITH CONTROLLED DIVERGENCE MADE BY THE **METHOD** OF GROOVE UNDULATION

Abstract: A ruling of cube corner elements comprising intersecting ruled vee-grooves is characterized in that at least one of the vee-grooves is made such the substrate being ruled and the cutting tool are oscillated with respect to one another during the ruling of the vee-groove. Rulings made in accordance with the instant invention can be designed to produce a cube corner element having broader divergence.

Classifications:

International (IPC 8-9): B29D B29D11/00 G02B G02B5/12 G02B5/122 G02B5/124 (Advanced/Invention);

G02B5/122 (Advanced/Non-invention);

G02B5/12 (Core/Invention);

B29D G02B (Subclass/Invention)

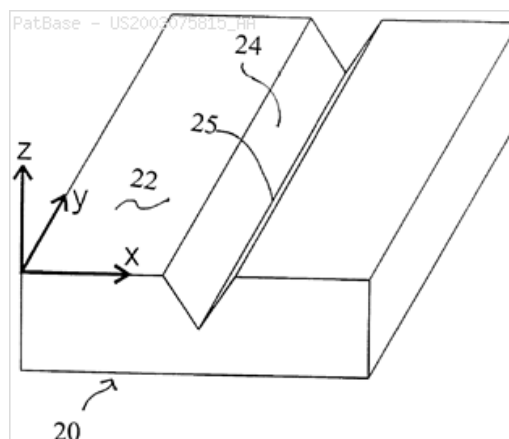
International (IPC 1-7): B29D11/00 G02B5/122 G02B5/124

CPC: Y10S359/90 B29D11/00605 B29C2793/00 G02B5/124

Y10T428/2457 G02B5/122

European: B29D11/00E G02B5/122 G02B5/124 L29C793/00

US: 264/1.34 264/1.340P 264/1.9 264/19 359/529 359/529S 359/530 359/530P 359/900 428/167



Family:

Publication number	Publication date	Application number	Application date
AU2002312427 AA	20021223	AU20020312427	20020611
CN100406240 C	20080730	CN20028011691	20020611
CN1514769 A	20040721	CN20028011691	20020611
DE60236297 D1	20100617	DE20026036297	20020611
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ES2342458 T3	20100707	ES20020739797T	20020611
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US2006007543 AA	20060112	US20050216564	20050831
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US7427139 BB	20080923	US20050216564	20050831
WO02101423 A2	20021219	WO2002US18320	20020611
WO02101423 A3	20030424	WO2002US18320	20020611

Priority:

US20010297394P 20010611 US20020167135 20020611 WO2002US18320 20020611
 WO2002US18320 20031211 US20050216564 20050831

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Assignee(s): AVERY DENNISON 150 NORTH ORANGE GROVE BOULEVARD CORP

Inventor(s): (std): COUZIN DANNIS I ; COUZIN DENNIS I ; HEENAN SIDNEY A ; HEENAN SIDNEY A DI ; SANDLER RONALD A ; SANDLER LEGAL REPRESENTATIVE R

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Agent(s): MUELLER BORE AND PARTNER PATENTANWALTE; CLT PATENT AND TRADEMARK HK LTD UNIT 10 34 F OFFICE TOWER CONVENTION; CLT PATENT AND TRADEMARK HK LTD; CYNTHIA S MURPHY RENNER OTTO BOISSELLE AND SKLAR LLP; RENNER OTTO BOISSELLE AND SKLAR LLP; RENNER OTTO BOISSELLE AND SKLAR LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

Title: TEXTURED RETROREFLECTIVE PRISM STRUCTURES AND MOLDS FOR FORMING SAME

Abstract: Retroreflective prism sheeting is formed in a mold with textured facets and/or windows thereon. Smaller prisms are formed adjacent larger prisms. Optionally, the optical axis of the prisms may be tilted with respect to one another, preferably in a negative direction. The textured facets or windows provide more uniform retroreflected light intensity distribution and whiteness of the sheeting.

Classifications:

International (IPC 8-9): B29C33/38 B29C33/42 B29C41/12 B29D11/00

B32B3/30 G02B5/04 G02B5/12 G02B5/124 G02B5/126 G06F17/00

G06F17/10 G06T1/00 G06T1/20 G06T11/00

G06T11/20 (Advanced/Invention);

B29C33/38 B29C33/42 B29C41/12 B29D11/00 B29L11/00

B32B3/30 (Advanced/Non-invention);

B29C33/38 B29C33/42 B29C41/12 B32B3/30 G02B5/12 G06F17/00 G06F17/10 G06T1/00 G06T1/20 G06T11/00

G06T11/20 (Core/Invention);

G02B5/12 (Core/Non-invention)

International (IPC 1-7): B28B11/18 B29C33/38 B29C33/42 B29C41/12 B29D11/00 B29L11/00 B32B3/00 B32B3/30 B32B5/00

G02B5/04 G02B5/12 G02B5/122 G02B5/124 G02B5/126

CPC: B29D11/00605 Y10S428/913 Y10T428/24612 Y10T428/24273 Y10T428/24355 Y10T428/24479 Y10T428/2457

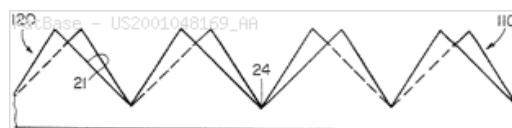
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US: 156/242 2/244 216/24 216/24S 264/1.1 264/1.36 264/1.360S 264/1.38 264/1.9 264/1.900S 264/11 264/138 264/166

264/167 264/19 264/2.2 264/2.5 264/2.500P 264/219 264/22 264/241 264/25 264/284 359/529 359/53 359/530 359/530S 40/612

404/9 425/542 425/588 428/131 428/141 428/156 428/167 428/172 428/212 428/30 428/913



Family:

Publication number	Publication date	Application number	Application date
AU199535550 A1	19960419	AU19950035550	19950918
AU199742644 A1	19980414	AU19970042644	19970910
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WO9812581 A1	19980326	WO1997US15993	19970910
WO9859266 A1	19981230	WO1998US12476	19980616
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Priority:

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US20010901199	20010709				

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Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

Title: PRISMATIC **RETROREFLECTOR** HAVING A MULTI-PLANE FACET

Abstract: A retroreflective structure includes a retroreflective sheeting having an array of transparent prisms formed into pairs of prisms. Each prism includes a base aperture and three intersecting lateral faces meeting at an apex. Each of the lateral faces includes a base edge which forms a portion of the perimeter of the base aperture. The base edge of each lateral face intersects the base edge of a contiguous lateral face to form a base point, the first face of at least one prism in the array including a first face first planar surface and a first face second planar surface. The first face first planar surface and the first face second planar surface are contiguous along an edge having a first and second end points, wherein the apex, the first end point, and a first base point are coplanar and form a continuous edge from the first base point to the apex.

Classifications:

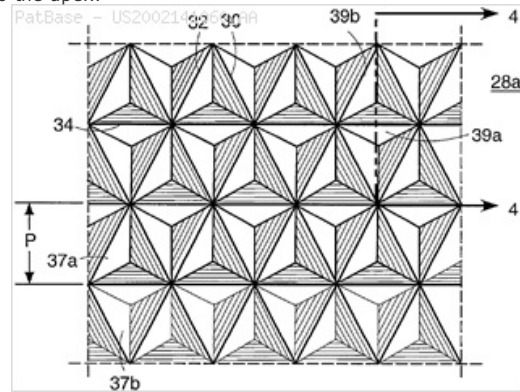
International (IPC 8-9): B29D11/00 G02B5/124 (Advanced/Invention);
B29D11/00 G02B5/12 (Core/Invention)

International (IPC 1-7): B29D11/00 G02B5/04 G02B5/122 G02B5/124

CPC: G02B5/124 Y10S425/808

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359/834 425/808

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Publication number	Publication date	Application number	Application date
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Priority:

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Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR HW HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW