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• **CHEN, Tsung-Ming**
Taiwan (TW)

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(71) Applicant: **Fuyu Electric Co., Ltd.**
Hsinchu County 30643 (TW)

(74) Representative: **Gee, Steven William**
D.W. & S.W. GEE
1 South Lynn Gardens
London Road
Shipston on Stour
Warwickshire CV36 4ER (GB)

(72) Inventors:
• **YEH, Kuo-Kuang**
Taiwan (TW)

(54) **LIGHTING FIXTURE FOR LAMP TUBE**

(57) A lighting fixture for a lamp tube includes an arc-shaped reflecting panel (110) and a lampshade (120). The lampshade (120) includes a rectangular frame and multiple partitions (150). The partitions (150) are fixed between two opposite sides of the rectangular frame. A lamp tube (102) is disposed between the other two opposite sides of the rectangular frame and on a central axis of the reflecting panel (110). The lamp tube (102) is

surrounded by the reflecting panel (110) and the partitions (150). The reflecting panel (110) and the lampshade (120) have light-reflecting surfaces. The reflection from the reflecting panel (110) and the rectangular frame increases the lightness of a light output side of the lighting fixture, and at the same time fractional light from the lamp tube (102) is reflected by the partitions (150) so as to lessen glare.

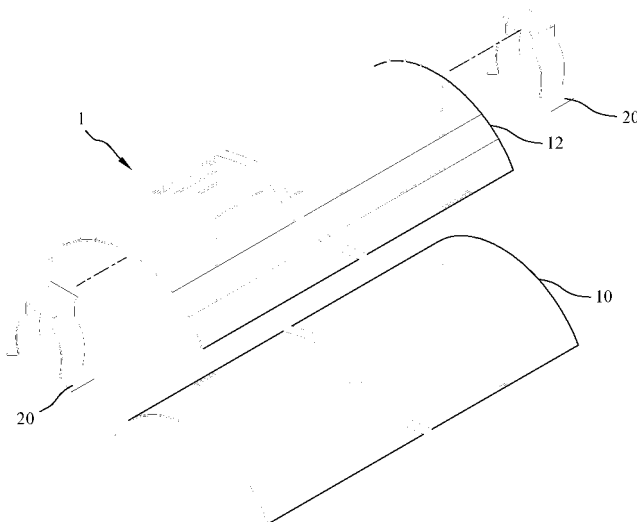


FIG. 1 (PRIOR ART)

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a lighting fixture for improving the luminance of a lamp tube, especially to a lighting fixture that reflects light off an arc-shaped reflecting panel and a lampshade for enhancing light output efficiency and reducing glare.

2. The Prior Art

[0002] Recently, lighting fixtures have been developed to decrease energy loss and environmental pollution. The studies for lighting technology have been developed toward energy saving, low pollution, and intelligent lighting. Forms and efficiency of illumination are decided by lighting fixtures. Therefore, lighting fixtures with high efficiency, low glare and low light pollution have become popular. For instance, Taiwan Utility Patent Nos. M326615 and M330418 both provide lighting fixtures with reflecting sheets, so as to improve luminance and enhance light output efficiency.

[0003] Referring to FIG 1, Taiwan Utility Patent No. M326615 discloses a device 1 for improving luminance of a fluorescent lamp, which includes a reflecting sheet 10, a housing 12 and two retaining clamps 20. The reflecting sheet 10 is disposed under and protected by the housing 12. A lamp tube (not shown in figure) is disposed below the reflecting sheet 10 and is clasped at two ends by the retaining clamps 20. The concave surface of the reflecting sheet 10 can reflect the rays of light emitted from the lamp tube so that the luminance of the fluorescent lamp is thus enhanced.

[0004] However, the device 1 mentioned above has only one reflecting sheet 10 with concave surface, and it is incapable of fully reflecting the rays of light. Thus, the device 1 only increases limited luminance, and is unable to reduce glare.

[0005] Referring to FIG 2, Taiwan Utility Patent No. M330418 discloses a reflector unit 2 of a lighting fixture, which includes a carrier plate 30 and a housing 40. There are two lamp holders 32 at two ends of the carrier plate 30 for fixing lamp tubes 50, respectively. The housing 40 has two inclined reflecting surfaces 42 for reflecting the rays of light emitted from the lamp tubes 50. Therefore, illumination may be improved, and it allows a lamp tube with lower wattage to illuminate just like a lamp tube with higher wattage.

[0006] However, the reflector unit 2 having two reflecting surfaces 42 can not fully reflect the rays of light. Moreover, it disperses the rays of light. Thus, the increased luminance is limited and glare is unable to be reduced.

SUMMARY OF THE INVENTION

[0007] A primary objective of the present invention is to provide a lighting fixture for a lamp tube that can enhance the light output efficiency of the lamp tube and lessen glare.

[0008] A lighting fixture for a lamp tube according to the present invention can be adapted to reflect a light emitted from the lamp tube and provide a light output at a light output side of the lighting fixture. The lighting fixture comprises a reflecting panel and a lampshade.

[0009] The reflecting panel has a first arc-shaped surface. The first arc-shaped surface has reflectivity and is bent towards the lamp tube. The lamp tube is disposed at a central axis of the first arc-shaped surface of the reflecting panel.

[0010] The lampshade comprises a first side plate, a second side plate, a first end plate, a second end plate and a plurality of partitions. The first side plate, the second side plate, the first end plate and the second end plate constitute a rectangular frame. The first end plate and the second end plate each have an opening for receiving and holding the lamp tube. The first side plate and the second side plate each have a plurality of inserting holes. An inner side of the first side plate, the second side plate, the first end plate and the second end plate have reflectivity.

[0011] The partitions each comprise a first surface, a second surface, a third surface, a fourth surface, a fifth surface, a sixth surface, a seventh surface, and a first edge. The first surface has reflectivity. The second surface has reflectivity and is opposite to the first surface. The third surface has reflectivity and is connected to the first surface, and the first surface and the third surface constitute a first side of the partition. The fourth surface has reflectivity and is connected to the second surface, and the second surface and the fourth surface constitute a second side of the partition. The second side of the partition is opposite to the first side thereof. The fifth surface has reflectivity and is disposed at a third side of the partition and connected to the first surface, the second surface, the third surface and the fourth surface. The sixth surface has reflectivity and is disposed at a fourth side of the partition and connected to the first surface, the second surface, the third surface and the fourth surface. The fourth side of the partition is opposite to the third side thereof. The fifth surface and the sixth surface respectively are received and inserted in the inserting holes of the first side plate and the second side plate. The seventh surface has reflectivity and has a second arc-shaped face, and is disposed at a fifth side of the partition and connected to the third surface, the fourth surface, the fifth surface and the sixth surface. The seventh surface is facing towards the lamp tube. The first edge is formed by a boundary between the first surface and the second surface, and the first edge has a first arc-shaped face facing toward the light output side.

[0012] According to the present invention, the first side

plate and the second side plate respectively have a plurality of hook holes, and the reflecting panel has a plurality of hooks disposed at two longitudinal sides of the reflecting panel for engaging with the hook holes of the first side plate and the second side plate.

[0013] According to the present invention, the lamp tube is disposed at a central axis of the first arc-shaped surface of the reflecting panel.

[0014] According to the present invention, the reflecting panel is made of aluminium with mirror finish.

[0015] According to the present invention, the first side plate, the second side plate, the first end plate and the second end plate are made of aluminium with mirror finish.

[0016] According to the present invention, the first side plate and the second side plate are one of a planar plate, a combination of planar plates, an outer convex plate, an inner concave plate, and a curved plate. The combination of planar plates includes a plurality of planar plates connected to each other.

[0017] According to the present invention, the first surface and the second surface are one of a planar surface, a combination of planar surfaces, an outer convex surface, an inner concave surface and a curved surface. The combination of planar surfaces includes a plurality of planar surfaces connected to each other.

[0018] According to the present invention, a radius of the second arc-shaped face of the seventh surface is larger than that of the first arc-shaped surface of the reflecting panel.

[0019] According to the present invention, the second arc-shaped face of the seventh surface is one of a planar surface, a combination of planar surfaces, an outer convex surface, an inner concave surface and a curved surface. The combination of planar surfaces includes a plurality of planar surfaces connected to each other.

[0020] According to the present invention, the seventh surface further comprises at least a plane connected to the second arc-shaped face.

[0021] According to the present invention, the partition is a solid partition having a reflective surface.

[0022] According to the present invention, the partition is a hollow partition folded by a thin plate.

[0023] The lighting fixture for a lamp tube in accordance with the present invention comprises a reflecting panel and a lampshade. A lamp tube is disposed between the reflecting panel and the lampshade. The reflecting panel has an arc-shaped reflecting surface. The lampshade includes multiple partitions inserted therein, which can reflect the light emitted from the lamp tube to increase the lightness of the light output side and lessen glare.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] The present invention will be apparent to those skilled in the art by reading the following detailed description of a preferred embodiment thereof, with reference to the attached drawings, in which:

[0025] FIG 1 is a schematic view of a conventional device for improving luminance of a lamp tube;

[0026] FIG 2 is an exploded view showing a reflector unit of another conventional lighting fixture;

5 **[0027]** FIG 3 is a perspective view of a lighting fixture for a lamp tube according to the present invention;

[0028] FIG 4 is a perspective view showing a partition of the lighting fixture according to the present invention;

10 **[0029]** FIG 5 is a perspective schematic view showing various first side plates of the lighting fixture according to the present invention; and

[0030] FIG 6 is an end view showing various partitions of the lighting fixture according to the present invention.

15 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0031] Referring to FIG 3, a lighting fixture 100 according to the present invention comprises a reflecting panel 110 and a lampshade 120, which are adapted for surrounding a lamp tube 102, such that the light emitted from the lamp tube 102 is focused toward a light output side along a direction D to increase the luminance of the light emitting side. The reflecting panel 110 has reflectivity and is made of aluminium with mirror finish. The reflecting panel 110 has a first arc-shaped surface and a plurality of hooks 112. The first arc-shaped surface is bent towards the lamp tube 102, and the hooks 112 are disposed at two longitudinal sides of the reflecting panel 110 to connect with the lampshade 120. The lamp tube 102 is disposed at a central axis of the first arc-shaped surface of the reflecting panel 102.

[0032] The lampshade 120 comprises a first side plate 121, a second side plate 122, a first end plate 131, a second end plate 132 and a plurality of partitions 150. The first side plate 121, the second side plate 122, the first end plate 131 and the second end plate 132 constitute a rectangular frame, the partitions 150 are disposed between the first side plate 121 and the second side plate 122. Both of the first end plate 131 and the second end plate 132 have an opening 104 for receiving and holding the lamp tube 102. The first side plate 121 and the second side plate 122 each have a plurality of hook holes 124 and a plurality of inserting holes 140. The hook holes 124 are engaged with the hook 112 of the reflecting panel 110, and the inserting holes 140 are engaged with the partitions 150. An inner side of the first side plate 121, the second side plate 122, the first end plate 131 and the second end plate 132 have reflectivity to reflect the light emitted from the lamp tube 102 to the light output side along the direction D. The first side plate 121, the second side plate 122, the first end plate 131 and the second end plate 132 are made of aluminium with mirror finish.

[0033] Referring to FIG 4, the partitions 150 have a plurality of reflective surfaces and can be a solid partition, or a hollow partition folded from, for example, an aluminium sheet with mirror finish. The partition 150 comprises a first surface 151, a second surface 152, a third surface

153, a fourth surface 154, a fifth surface 155, a sixth surface 156, a seventh surface 157 and an edge 159. The first surface 151 and the third surface 153 constitute a first side of the partition, the second surface 152 and the fourth surface 154 constitute a second side of the partition, and the second side is opposite to the first side. The fifth surface 155 is disposed at a third side thereof and is connected to the first surface 151, the second surface 152, the third surface 153 and the fourth surface 154. The sixth surface 156 is disposed at a fourth side thereof and is connected to the first surface 151, the second surface 152, the third surface 153 and the fourth surface 154. The fourth side is opposite to the third side. The seventh surface 157 is disposed at a fifth side thereof and is connected to the third surface 153, the fourth surface 154, the fifth surface 155 and the sixth surface 156.

[0034] The first edge 159 is formed by a boundary between the first surface 151 and the second surface 152 of the partition. The first edge 159 has a first arc-shaped face facing toward the direction D of the light output side. The fifth surface 155 and the sixth surface 156 are respectively received and inserted in the inserting holes 140 of the first side plate 121 and the second side plate 122, thereby fixing the partitions 150 to the lampshade 120. The fifth surface 157 having a second arc-shaped face towards the lamp tube 102 is to reflect a part of light emitted from the lamp tube 102 for reducing glare. A radius of the second arc-shaped face of the seventh surface 157 is larger than that of the first arc-shaped surface of the reflecting panel 110. The seventh surface 157 may further comprise at least one plane connected to the second arc-shaped face.

[0035] For the purpose of illustration, in FIG 3, the first side plate 121, the second side plate 122, the first end plate 131 and the second end plate 132 are, but not limited to, a planar plate. Especially, the first side plate 121 and the second side plate 122 may be one of a planar plate, a combination of planar plates, an outer convex plate, an inner concave plate, and a curved plate (see FIG 5). The combination of planar plates may include a plurality of planar plates connected to each other. FIG 5 is a perspective schematic view showing various first side plates of the lighting fixture according to the present invention.

[0036] For the purpose of illustration, in FIG 4, the second arc-shaped face of the seventh surface 157, the first surface 151 and the second surface 152 are, but are not limited to, arc-shaped surfaces. The second arc-shaped face of the first surface 151, the second surface 152 and the seventh surface 157 may be one of a planar surface, a combination of planar surfaces, an outer convex surface, an inner concave surface and a curved surface (see FIG 6). The combination of planar surfaces includes a plurality of planar surfaces connected to each other. FIG 6 is an end view showing various partitions of the lighting fixture according to the present invention.

[0037] Although the present invention has been described with reference to the preferred embodiment

thereof, it is apparent to those skilled in the art that a variety of modifications and changes may be made without departing from the scope of the present invention which is intended to be defined by the appended claims.

Claims

1. A lighting fixture for a lamp tube, which is adapted to reflect light emitted from the lamp tube and provide a light output at a light output side of the lighting fixture, the lighting fixture comprising:

a reflecting panel having a first arc-shaped surface, wherein the first arc-shaped surface has reflectivity and is bent towards the lamp tube, the lamp tube is to be disposed at a central axis of the first arc-shaped surface of the reflecting panel; and

a lampshade comprising a first side plate, a second side plate, a first end plate, a second end plate and a plurality of partitions; the first side plate, the second side plate, the first end plate and the second end plate constituting a rectangular frame, the first end plate and the second end plate each having an opening for receiving and holding the lamp tube, the first side plate and the second side plate each having a plurality of inserting holes, an inner side of the first side plate, the second side plate, the first end plate and the second end plate having reflectivity, wherein

the partitions each comprise:

- a first surface having reflectivity;
- a second surface having reflectivity and being opposite to the first surface;
- a third surface having reflectivity and connected to the first surface, the first surface and the third surface constituting a first side of the partition;
- a fourth surface having reflectivity and connected to the second surface, the second surface and the fourth surface constituting a second side of the partition, and the second side being opposite to the first side;
- a fifth surface having reflectivity, and disposed at a third side of the partition and connected to the first surface, the second surface, the third surface and the fourth surface;
- a sixth surface having reflectivity, and disposed at a fourth side of the partition and connected to the first surface, the second surface, the third surface and the fourth surface, the fourth side being opposite to the third side, the fifth surface and the sixth surface being respectively received and insert-

- ed in the inserting holes of the first side plate and the second side plate;
- a seventh surface having reflectivity and a second arc-shaped face, and disposed at a fifth side of the partition and connected to the third surface, the fourth surface, the fifth surface and the sixth surface, the seventh surface facing towards the lamp tube; and
 a first edge formed by a boundary between the first surface and the second surface, the first edge having a first arc-shaped face facing toward the light output side.
2. The lighting fixture as claimed in claim 1, wherein the first side plate and the second side plate respectively have a plurality of hook holes, the reflecting panel has a plurality of hooks disposed at two longitudinal sides of the reflecting panel for engaging with the hook holes of the first side plate and the second side plate.
 3. The lighting fixture as claimed in claim 1, wherein the lamp tube is disposed at a central axis of the first arc-shaped surface of the reflecting panel.
 4. The lighting fixture as claimed in claim 1, wherein the reflecting panel is made of aluminium with mirror finish.
 5. The lighting fixture as claimed in claim 1, wherein the first side plate, the second side plate, the first end plate and the second end plate are made of aluminium with mirror finish.
 6. The lighting fixture as claimed in claim 1, wherein the first side plate and the second side plate are one of a planar plate, a combination of planar plates, an outer convex plate, an inner concave plate, and a curved plate, the combination of planar plates includes a plurality of planar plates connected to each other.
 7. The lighting fixture as claimed in claim 1, wherein the first surface and the second surface are one of a planar surface, a combination of planar surfaces, an outer convex surface, an inner concave surface and a curved surface, the combination of planar surfaces includes a plurality of planar surfaces connected to each other.
 8. The lighting fixture as claimed in claim 1, wherein a radius of the second arc-shaped face of the seventh surface is larger than that of the first arc-shaped surface of the reflecting panel.
 9. The lighting fixture as claimed in claim 1, wherein the second arc-shaped face of the seventh surface
- is capable of being one of a planar surface, a combination of planar surfaces, an outer convex surface, an inner concave surface and a curved surface, the combination of planar surfaces includes a plurality of planar surfaces connected to each other.
10. The lighting fixture as claimed in claim 1, wherein the seventh surface further comprises at least a plane connected to the second arc-shaped face.
 11. The lighting fixture as claimed in claim 1, wherein the partition is a solid partition having a reflective surface.
 12. The lighting fixture as claimed in claim 1, wherein the partition is a hollow partition folded from a thin plate.

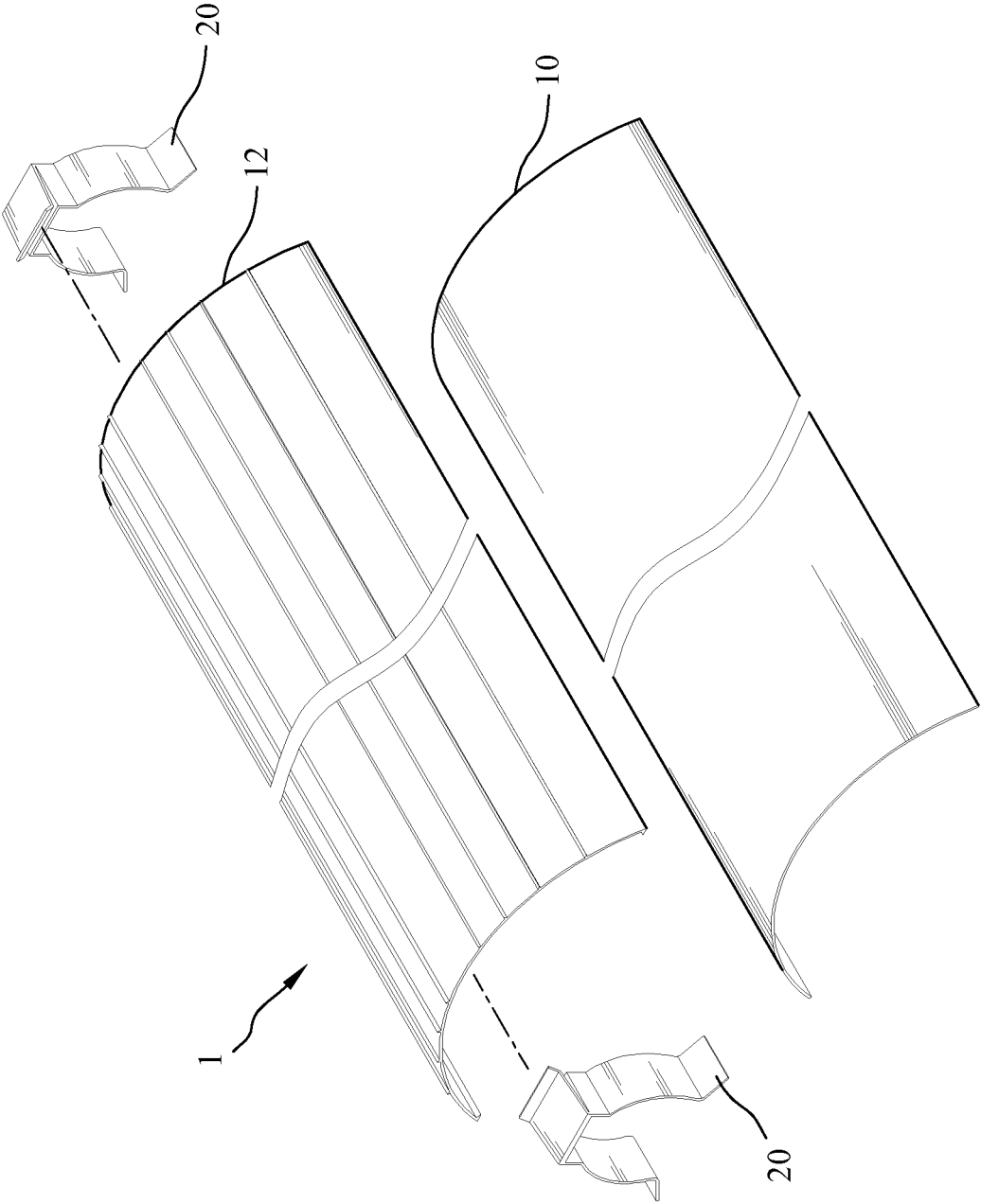


FIG. 1 (PRIOR ART)

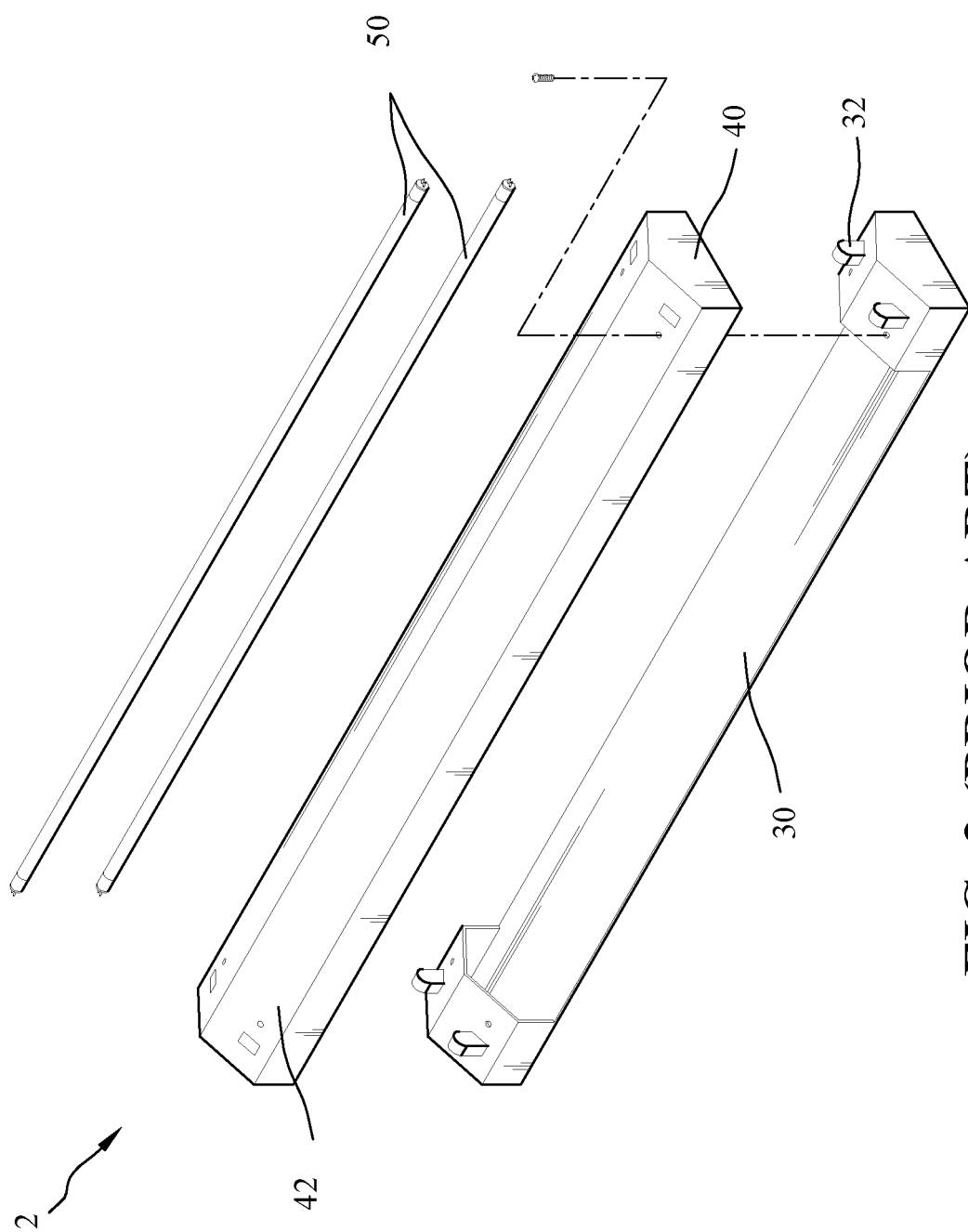


FIG. 2 (PRIOR ART)

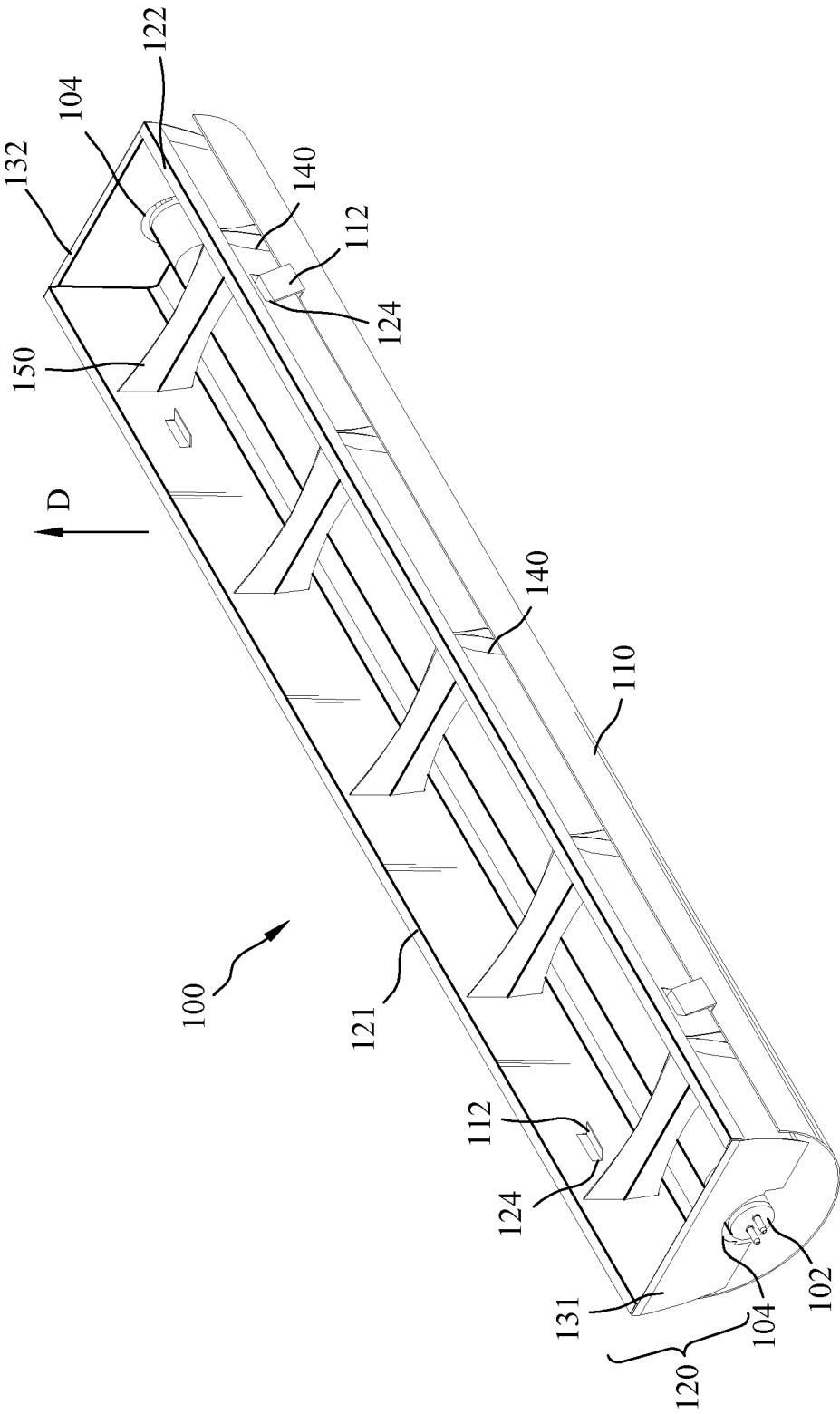


FIG. 3

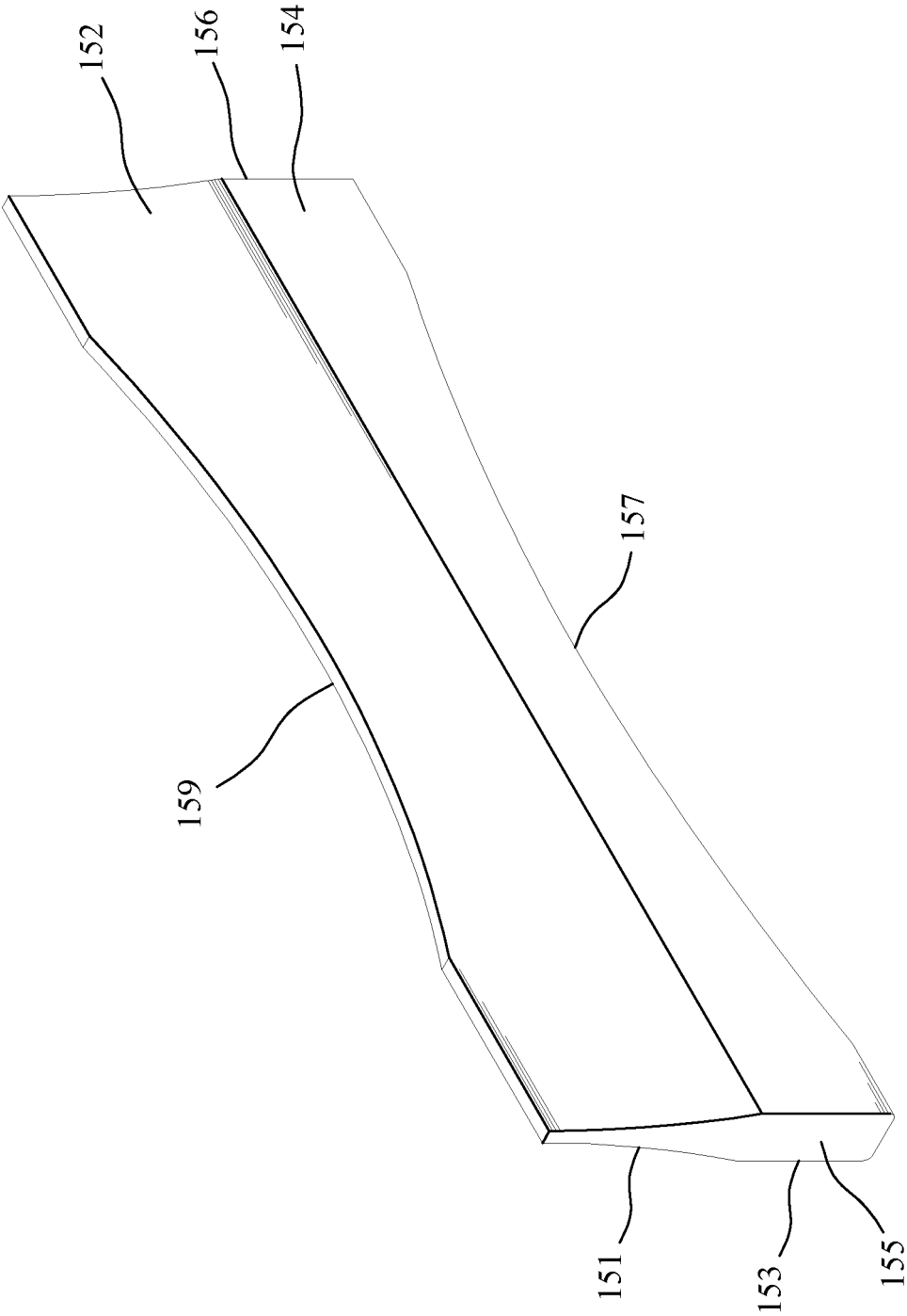


FIG. 4

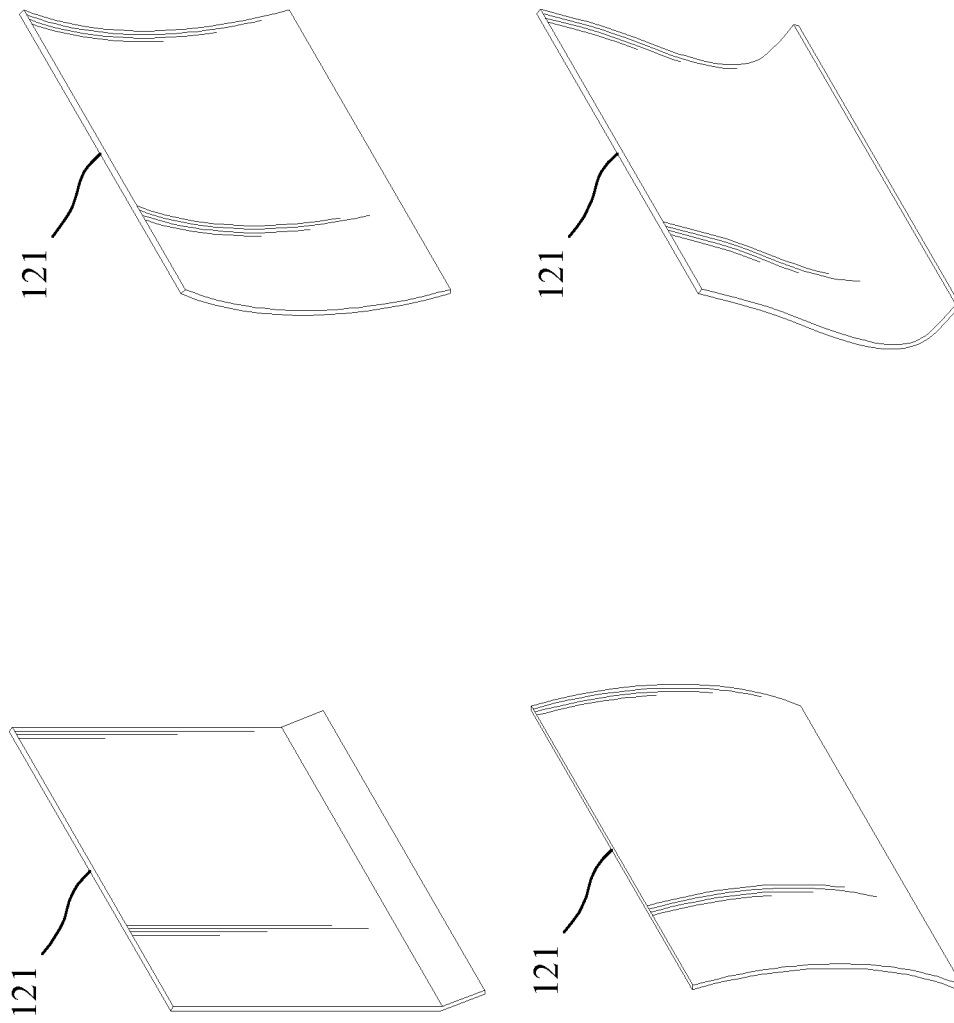


FIG. 5

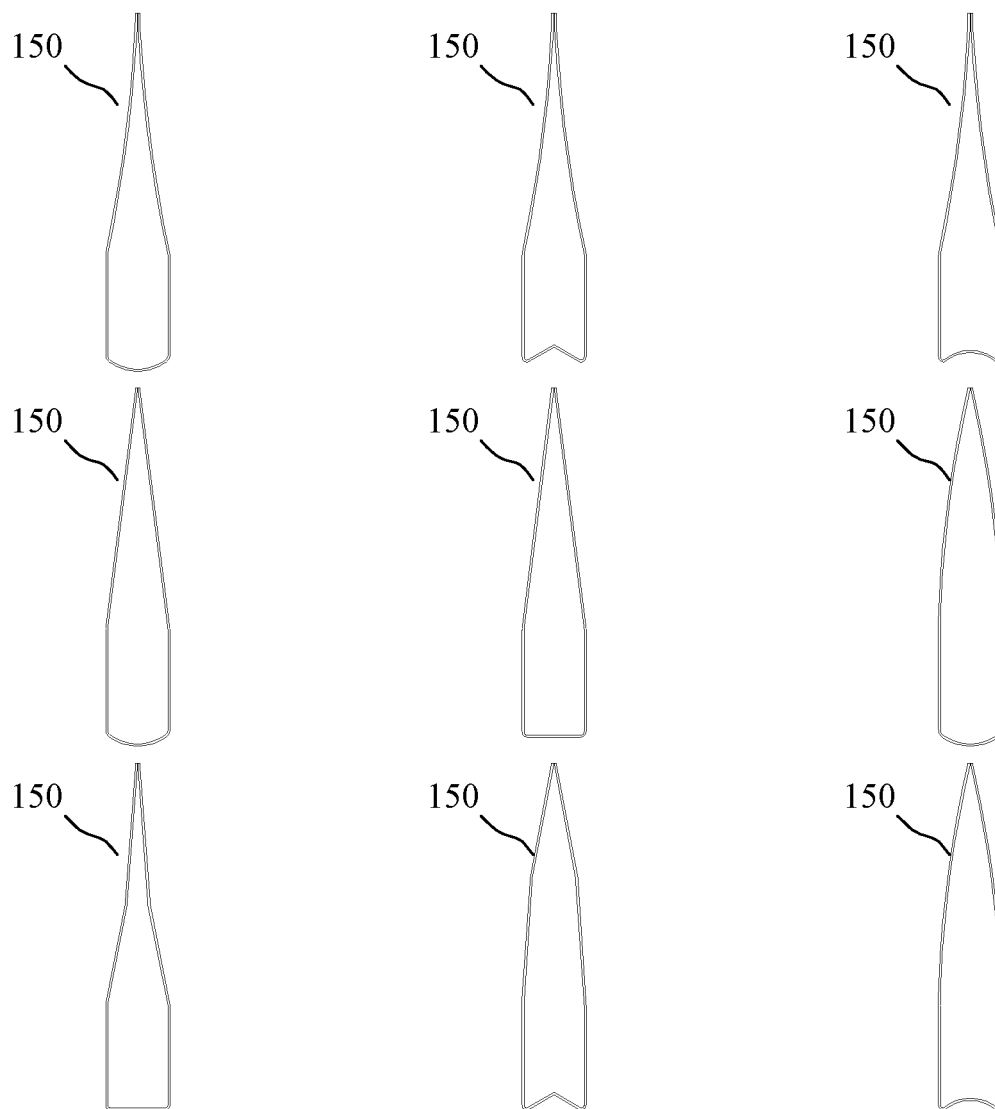


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2010/000078

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

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)

IPC: F21V 3/02; F21V3/-; F21V5/-; F21V7/04; F24V7/22; F21V7/-; F21V11/-; F21Y103/00

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)

CNPAT, WPI, EPODOC, light, cover, reflect, grid, grill, lattice, dizz+, twinkl+, glar+, blaz+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US6764199B2 (REGENT BELEUCHTUNGSKORPER AG) 20 Jul. 2004 (20.07.2004) see columns 3-8, figures 1-6	1-12
Y	CN2558850Y (ZHEJIANG SUNSHINE GROUP CO LTD) 02 Jul. 2003 (02.07.2003) see page 3 of description, figures 1-3	1-12
Y	CN1455147A (ZHEJIANG SUNSHINE GROUP CO LTD) 12 Nov. 2003 (12.11.2003) see page 4 of description, figures 5-8	1-12
A	CN1392938A (PILUX & DANPEX AG) 22 Jan. 2003 (22.01.2003) the whole document	1-12
A	CN1582377A (KONINK PHILIPS ELECTRONICS NV) 16 Feb. 2005 (16.02.2005) the whole document	1-12

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	“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
“A” document defining the general state of the art which is not considered to be of particular relevance	“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
“E” earlier application or patent but published on or after the international filing date	“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
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“O” document referring to an oral disclosure, use, exhibition or other means	
“P” document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 29 Mar. 2010 (29.03.2010)	Date of mailing of the international search report 22 Apr. 2010 (22.04.2010)
Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Authorized officer ZHANG Yu Telephone No. (86-10)62414355

Form PCT/ISA /210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2010/000078

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN2583501Y (CHEN, Wude, et al) 29 Oct. 2003 (29.10.2003) the whole document	1-12
A	EP0138747A1 (SEMPERLUX GMBH) 24 Apr. 1985 (24.04.1985) the whole document	1-12
A	US5758954A (U.S. PHILIPS CORPORATION) 02 Jun. 1998 (02.06.1998) the whole document	1-12
A	DE3739077A1 (THORN LICHT GMBH) 1 Jun. 1988 (01.06.1988) the whole document	1-12
A	GB2350419A (SITECO BELEUCHTUNGSTECHNIK GMBH) 29 Nov. 2000 (29.11.2000) the whole document	1-12

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INTERNATIONAL SEARCH REPORT
 Information on patent family members

International application No.

PCT/CN2010/000078

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
US6764199B2	20.07.2004	EP1314928A1	28.05.2003
		CA2412280A1	23.05.2003
		US2003099107A1	29.05.2003
		EP1314928B1	12.10.2005
		DE50204514G	17.11.2005
CN2558850Y	02.07.2003	NONE	
CN1455147A	12.11.2003	CN1208573C	29.06.2005
CN1392938A	22.01.2003	WO0235147A1	02.05.2002
		AU9214101A	06.05.2002
		BR0107343A	27.08.2002
		SK9352002A3	06.11.2002
		US2003002285A1	02.01.2003
		KR20020063238A	01.08.2002
		CZ20022228A3	15.01.2003
		HU0203942B	28.03.2003
		ZA200204498A	27.08.2003
		EP1358432A1	05.11.2003
		JP2004512644T	22.04.2004
		MXPA02005545A	01.11.2003
		MX226264B	14.02.2005
		CN1182339C	29.12.2004
		US7036957B2	02.05.2006
CN1582377A	16.02.2005	KR100501914B	17.07.2005
		WO03038336A1	08.05.2003
		EP1442251A1	04.08.2004
		AU2002341312A1	12.05.2003
		US2004252510A1	16.12.2004
		JP2005507549T	17.03.2005
		US7108398B2	19.09.2006
		EP1442251B1	17.10.2007
		DE60223066E	29.11.2007

Form PCT/ISA /210 (patent family annex) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2010/000078

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
		ES2292815T3	16.03.2008
		DE60223066T2	17.07.2008
		JP4223402B2	12.02.2009
		CN100473896C	01.04.2009
CN2583501Y	29.10.2003	NONE	
EP0138747A1	24.04.1985	EP0138747B	20.01.1988
		DE3468930G	25.02.1988
US5758954A	02.06.1998	WO9625623A1	22.08.1996
		AU4495096A	04.09.1996
		EP0757772A1	12.02.1997
		NZ300261A	24.11.1997
		HU9602819A2	28.05.1997
		JP10502765T	10.03.1998
		HU214621B	28.04.1998
		AU700856B	14.01.1999
		MX9604847A1	01.02.1998
		EP0757772B1	03.05.2000
		DE69608044E	08.06.2000
		ES2147914T§	01.10.2000
		CN1148884A	30.04.1997
		MX210408B	23.09.2002
		CN1083078C	17.04.2002
DE3739077A1	01.06.1988	EP0268986A	01.06.1988
		EP0268986B1	26.01.1994
		DE3788934G	10.03.1994
		ES2050660T3	01.06.1994
GB2350419A	29.11.2000	DE19916601A1	19.10.2000
		DE19916601C2	01.08.2002
		GB2350419B	01.10.2003
		AT500187B1	15.02.2006
		AT500187A1	15.11.2005

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2010/000078

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CLASSIFICATION OF SUBJECT MATTER:

F21V3/02(2006.01)i

F21V7/04(2006.01)i

F21V7/22(2006.01)i

F21Y103/00(2006.01)n

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- TW M326615 [0002] [0003]
- TW M330418 [0002] [0005]