



New connection on: : 13-10-2020 : 22:20:39 - Last disconnection on: : 13-10-2020 : 22:20:30

V 4.0.0.44803(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#{D201820}) (RPM D201820)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 8] device and curv+ and laminat+ and glass and pane+ and suction and elastic+ and deform+

Results in EPODOC 0

[SS 9] device and curv+ and laminat+ and glass and pane+

Results in EPODOC 29

[SS 10] ..li



1/29 © EPODOC / EPO

PN - [CN210759233U](#) U 20200616

PR - CN201921187317U 20190725

AP - [CN201921187317U](#) 20190725

DT - I

PA - YUGAN COUNTY JUQI ORNAMENTS CO LTD

TI - **Curved glass laminator**

AB - The utility model discloses a **curved glass laminator**. The **device** structurally comprises an operation **panel**, an electric control box shell, a diaphragm suction cup, an alignment table, an adjusting handle, a control table, a **laminating** table and a handle groove, according to the utility model, the handle grooves are respectively arranged on the side wall grooves on the two sides of the electric cabinet shell; the first clamping plate and the second clamping plate are designed to be of an inwards-concave structure. Heat insulation plate pasted on inner wall, the heat conduction effect of heat generated by an electronic element can be effectively isolated; during manual carrying, the holding rod at the position where the pipe sleeve and the fixing piece are installed and fixed serves as a hand grabbing force structure, grabbing force can be concentrated on the hand of the structure, force application operation of workers is facilitated, the lifting rope can penetrate through the winding rod and the wire body to be vertically upward, the two sides of the lifting rope are balanced, carrying stability can be effectively improved, and the safety coefficient of **device** carrying is improved.

2/29 © EPODOC / EPO

PN - [KR20200010928](#) A 20200131

PR - KR20180085579 20180723

AP - [KR20180085579](#) 20180723

DT - I

CI - G09F9/301 (CN)

PA - APS HOLDINGS CORP [KR] ; AP SYSTEMS INC [KR]

TI - Apparatus for **laminating** pannel to window and method for **laminating** pannel to window

AB - The present invention relates to a window **panel laminating device** and a window **panel laminating** method, and more specifically, to a window **panel laminating device** for bonding a **panel** to window **glass** with at least one corner portion **curved**, and a window **panel laminating** method. According to an embodiment of the present invention, the window **panel laminating device** comprises: a window mounting unit on which the window **glass** with at least one corner portion **curved** is mounted; a **panel** support unit which is provided to be opposite to the window mounting unit and supports a **panel**; and a gap adjusting unit which adjusts a gap between the window mounting unit and the **panel** support unit. The **panel** support unit comprises: a base plate facing the window mounting unit; a rubber sheet at least partially in contact with the base plate and provided between the window mounting unit and the base plate; and a fluid supply member supplying a fluid between the rubber sheet and the base plate. The present invention can firmly bond window **glass** and a **panel** without bubbles.

3/29 © EPODOC / EPO

PN - [KR101976109B](#) B1 20190910

PR - KR20180008033 20180123

AP - [KR20180008033](#) 20180123

DT - I

CT - *// STSE (B1)*
KR101746650B B1 20170614 [];
KR100609871B B1 20060808 [];
[KR20150126270](#) A 20151111 [] (LEE GUN HA [KR], et al);
[KR20150110975](#) A 20151005 [] (AVACO CO LTD [KR]);
[EP0370973](#) A2 19900530 [] (TECHNICONCONSULT SRL [IT])

CI - B29C66/83413 (KR)
- B29C66/9261 (KR)
- B32B37/0053 (KR)
- B32B37/10 (KR)
- B32B41/00 (KR)

CA - B32B2457/20 (KR)

PA - ANMICRON SYSTEM LTD [KR]

TI - ROLLER APPARATUS HAVING HORIZONTAL CORRECTION FUNCTION FOR **LAMINATING CURVED** DISPLAY **PANEL**

AB - The present invention relates to a roller **device** capable of horizontal correction of a roller for **laminating** a **curved** display, which frequently checks and corrects the horizontality of a roller for **laminating** a flexible display or film to a **curved glass** or film formed into a C or S shape by using a pressure roller. More specifically, a central axis of the pressure roller moved along the C- or S-shaped surface of the **curved glass** and a central axis of a roller rotational driver rotating the pressure roller at a predetermined angle to allow the load of the pressure roller to act perpendicular to the **curved glass** are on the same line. The load applied to the pressure roller is not applied to the moment load of the roller rotational driver. A roller horizontal adjustment unit capable of adjusting the horizontal level of the pressure roller is installed in the lower portion of a

roller main body. Therefore, it is possible to measure the actual load applied by the roller on the **curved glass**. Depending on the shape of the **curved glass**, the load applied to the **glass** surface can be quantitatively applied to prevent the cause of breakage or cracking of the **curved glass**. In addition, it is possible to solve the problem that bubbles are generated between the **glass** and the display during a **lamine** operation by lateral/horizontal change due to long-term use of the pressure roller.

4/29 © EPODOC / EPO

PN - [EP3593994](#) A2 20200115
 PNFP - EP3593994 A3 20200219
 PR - DE201810209938 20180620
 AP - [EP20190180039](#) 20190613
 DT - *; Rep
 CT - || STSE (A3)
[WO2018095693](#) A1 20180531 [XDA]
 (SAINT GOBAIN [FR])
 [XD] 1,6
 * page 10, line 1 - page 11, line 13;
 claim - *
 [A] 2-5,7-14;
[WO2004103922](#) A1 20041202 [XA]
 (SAINT GOBAIN [FR], et al)
 [X] 1
 * figures 3-11; claim - *
 [A] 2-14;
[FR2880343](#) A1 20060707 [XA] (SAINT
 GOBAIN [FR])
 [X] 1
 * page 6, line 14 - page 7, line 2 *
 [A] 2-14;
 CN204294254U U 20150429 [X]
 (SUZHOU POXIWAR EX EQUIPMENT
 CO LTD)
 [X] 1-5
 * figure -; claim - *;
[US2018126382](#) A1 20180510 [X]
 (JARVIS RICHARD A [US])
 [X] 1-5
 * figures 2-10, 12 *
 * paragraphs [0046], [0053] *
 * claim 1 *;
 DE202009009173U U1 20101209
 [XDI] (HAVERKAMP BERNHARD [DE])
 [XD] 6
 * paragraph [0019] - paragraph
 [0027]; figure -; claim - *
 [I] 7-14;
[DE102011117340](#) A1 20130502 [XDI]
 (ESW GMBH [DE], et al)
 [XD] 6
 * figure 1; claim - *

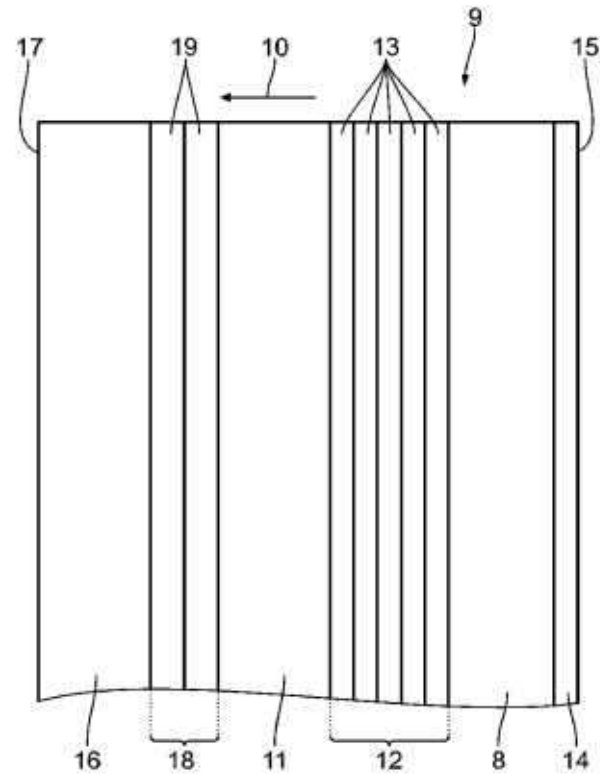


Fig. 3

[1] 7-14

- CCI - [B32B17/10889](#) ; [F41H5/0407](#)
- CI - B32B17/10889 (EP)
- F41H5/0407 (EP)
- PA - (A2 A3)
HAVERKAMP GMBH [DE]
- TI - (A2 A3)
LAMINATED GLASS PANE
AND **DEVICE** FOR SUPPORTING
A **CURVED GLASS** SHEET IN THE
MANUFACTURE OF A **CURVED**
LAMINATED GLASS PANE

5/29 © EPODOC / EPO

- PN - [KR101930800B](#) B1 20190311
- PR - KR20180024336 20180228
- AP - [KR20180024336](#) 20180228
- DT - I
- CT - // STSE (B1)
[KR20170033555](#) A 20170327 [] (SOULBRAIN CO LTD [KR]);
[KR20150062237](#) A 20150608 [] (SAMSUNG DISPLAY CO LTD [KR]);
[KR20150042123](#) A 20150420 []
- CI - B32B3/02 (KR)
- B32B27/08 (KR)
- B32B27/12 (KR)
- B32B27/308 (KR)
- B32B27/36 (KR)
- B32B27/365 (KR)
- B32B38/0036 (KR)
- CA - B32B2262/101 (KR)
- B32B2605/08 (KR)
- PA - HWANG JONG SOO [KR]
- TI - IT Structure of **curved-panel** for IT **device** and vehicle
- AB - The present invention relates to a structure of a **curved panel** for IT devices and automobiles. The structure of the **curved panel** of the present invention is obtained by forming a surface layer which is formed by a thin PET film manufactured by a biaxial stretching method, forming a **panel** fabric having a predetermined thickness by the **lamination** of at least one of PET, PMMA, PC film or a **glass** epoxy sheet on the lower layer thereof, and forming **curved** parts by heat forming the edge thereof based on the same. According to the structure of the present invention, it is possible to have an effect that the workability is improved while realizing the optimum surface hardness and strength.

6/29 © EPODOC / EPO

PN - [MX2018007190](#) A 20181109

PR - FR20150062333
20151214; WO2016FR53364
20161213

AP - [MX20180007190](#) 20161213

DT - I

CCI - [B32B17/10045](#) ; [B32B17/10541](#) ;
[B32B17/10669](#) ; [B32B17/10697](#) ;
[G02B27/01](#) ; [G02B27/0101](#)

CCA - [G02B2027/0112](#) ; [G02B2027/0194](#)

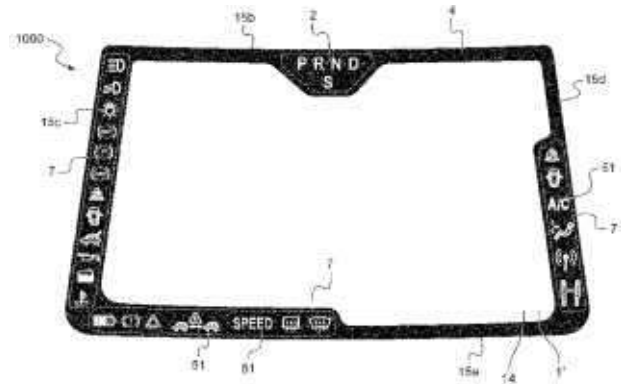
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B32B17/10541 (EP, US)
B32B17/10669 (EP, US)
B32B17/10697 (EP, US)
G02B27/01 (EP, US)
G02B27/0101 (EP, KR, US)

CA - B32B2605/006 (US)
G02B2027/0112 (EP, KR, US)
G02B2027/0194 (EP, KR, US)

PA - SAINT GOBAIN [FR]

TI - **LAMINATED** WINDSCREEN OF
VEHICLE WITH INTERNAL
LUMINOUS SIGNAGE.

AB - The invention relates to
a **laminated** windscreen with
internal luminous signage for a
vehicle, including a first
convex **glass panel** (1), with a first
main surface (11) F1 and a
second opposing main surface
(12) F2, and a second convex **glass panel**
panel (1'), with a third main
surface (13) F3 and a fourth
opposing main surface (14) F4,
one of the two **glass panels** being
made of mineral **glass**, said first
and second **glass panels** being
connected to one another via the
surfaces F2 and F3 by a **laminating**
insert (3, 33, 34, 35) made of a
thermoformable, thermoplastic
polymer material, said insert
comprising: a first main
adherence surface on the surface
F2 (31) side and a second main
adherence surface on the surface
F3 (32) side; a first peripheral,
inner masking layer (4) made of
opaque material, which is



between the second adherence surface (32) and the surface F3 (13) or which is on the surface F4 (14), said inner masking layer being discontinuous; a discontinuity (51) forming a signage (5); a second peripheral, outer masking layer (6) made of opaque material, between the first adherence surface (31) and the surface F2 (12), opposite the inner masking layer (4) and said discontinuity (51); and a source comprising a **curved** organic light-emitting diode (OLED, 2) **device**, between the surfaces F2 and F3, and emitting in the visible spectrum to illuminate the signage (5).

7/29 © EPODOC / EPO

- PN - [CN208150498U](#) U 20181127
- PR - CN201820531232U 20180413
- AP - [CN201820531232U](#) 20180413
- DT - I
- PA - SHENZHEN NF PHOTOELECTRIC EQUIPMENT CO LTD
- TI - Two -sided **curved glass laminator** and dustless **curved** surface **glass** handling **device** thereof
- AB - The utility model discloses a two -sided **curved glass laminator** and dustless **curved** surface **glass** handling **device** thereof, it includes the cylinder mounting **panel**, install centre gripping formula cylinder on the cylinder mounting **panel**, by the fixture of centre gripping formula cylinder control, wherein, the last clamping column who has soft joint that sets up of fixture, centre gripping formula cylinder control clamping column approaches **curved** surface **glass**, through the soft contact portion contacting **curved** surface **glass** on the clamping column, and then has pressed from both sides **curved** surface **glass** through fixture's clamping effect. The utility model discloses two -sided **curved glass laminator** and dustless **curved** surface **glass** handling **device** thereof is centre gripping **curved** surfaceglass saving well, and non -staining **glass** surface, need not not attach the clean step of **glass**, has reduced the running cost, has improved transportation efficiency, this handling **device** simple structure of while, and assembly costs is low, the installation and maintenance of also being convenient for.

8/29 © EPODOC / EPO

PN - [TW201727450](#) A 20170801

PNFP - TWI594157B B 20170801

PR - CN20161054468 20160127

AP - [TW20160104643](#) 20160217

DT - I

CCI - [B29C63/0052](#) ; [B29C63/0073](#) ;
[B29C63/02](#) ; [B29C63/024](#)

CCA - [B29K2709/08](#) ; [B29K2995/0026](#) ;
[B29L2031/3475](#)

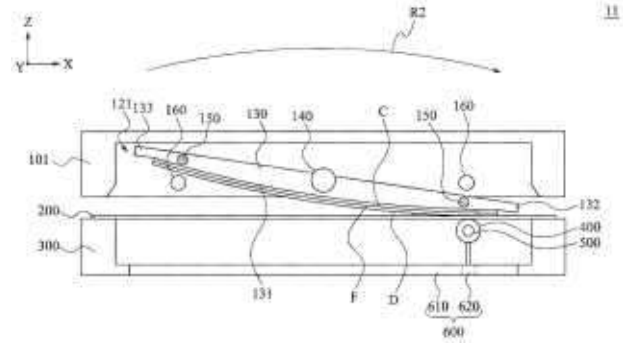
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B29C63/0073 (EP, US)
B29C63/02 (EP, US)
B29C63/024 (EP, US)
B29C65/56 (US)
G06F3/041 (CN)

CA - B29K2709/08 (EP, US)
B29K2995/0026 (EP, US)
B29L2031/3475 (EP, US)
G06F2203/04103 (CN)

PA - (A B)
QUANTA COMP INC [TW]

TI - (A)
Substrate- **laminating device** and
method of the same
(B)
SUBSTRATE- **LAMINATING DEVICE**
AND METHOD OF THE SAME

AB - (A)
A method of **laminating**
substrates includes steps as
follows. Providing a **curved glass**
sheet and a flexible light-
transmissive **panel** which are
faced to each other; using a
roller to roll and press the
flexible light-transmissive **panel**
so that the flexible light-
transmissive **panel** matches
the **curvature** of **curved glass** sheet
to be **laminated** on the **curved**
glass sheet gradually; sensing
the fitness of a local area of the
flexible light-transmissive **panel**
and the **curved glass** sheet; and
adjusting press force that the
roller presses on the local area
of the flexible light-
transmissive **panel** during the



flexible light-transmissive panel
being laminated on the curved
glass sheet.

9/29 © EPODOC / EPO

PN - [CN107111140](#) A 20170829

PR - FR20150062333
20151214; WO2016FR53364
20161213

AP - [CN20168003419](#) 20161213

DT - I

CT - // STSE (A)
[FR2519501](#) A1 19830708 [A] (3D
VIDEO CORP [US])
[A] 1-16
* 全文 *;
CN202503691U U 20121024 [Y]
(SAINT GOBAIN)
[Y] 1-16
* 权利要求1-58, 说明书第[0070]
-[0078],[0084]段, 附图1,4a-4c *;
CN202806308U U 20130320 [A]
(HUIZHOU DESAY SV AUTOMOBILE
ELECTRONIC CO LTD)
[A] 1-16
* 全文 *;
[US2014097636](#) A1 20140410 [A]
(SNIDER DARIN J [US], et al)
[A] 1-16
* 全文 *;
[CN103998236](#) A 20140820 [Y] (SAINT
GOBAIN)
[Y] 1-16
* 权利要求1-16, 说明书第[0044]
-[0067]段, 附图1-2 *

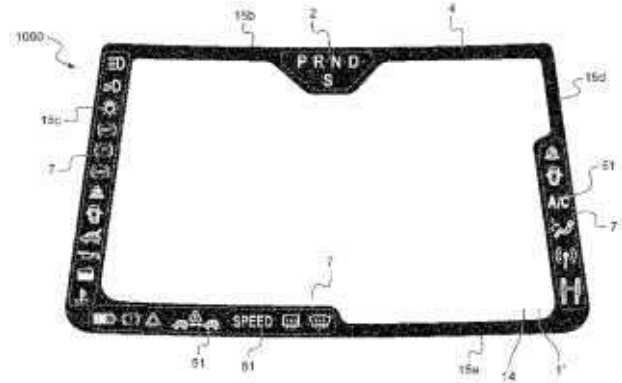
CCI - [B32B17/10045](#) ; [B32B17/10541](#) ;
[B32B17/10669](#) ; [B32B17/10697](#) ;
[G02B27/01](#) ; [G02B27/0101](#)

CCA - [G02B2027/0112](#) ; [G02B2027/0194](#)

CI - B32B17/10045 (EP, US)
- B32B17/10541 (EP, US)
- B32B17/10669 (EP, US)
- B32B17/10697 (EP, US)
- G02B27/01 (EP, US)
- G02B27/0101 (EP, KR, US)

CA - B32B2605/006 (US)
- G02B2027/0112 (EP, KR, US)
- G02B2027/0194 (EP, KR, US)

PA - SAINT-GOBAIN GLASS FRANCE



- TI - **LAMINATED** WINDSCREEN OF
VEHICLE WITH INTERNAL
LUMINOUS SIGNAGE
- AB - The invention relates to
a **laminated** windscreen with
internal luminous signage for a
vehicle, including a first
convex **glass panel** (1), with a first
main surface (11) F1 and a
second opposing main surface
(12) F2, and a second convex **glass
panel** (1'), with a third main
surface (13) F3 and a fourth
opposing main surface (14) F4,
one of the two **glass panels** being
made of mineral **glass**, said first
and second **glass panels** being
connected to one another via the
surfaces F2 and F3 by a **laminating**
insert (3, 33, 34, 35) made of a
thermoformable, thermoplastic
polymer material, said insert
comprising: a first main
adherence surface on the surface
F2 (31) side and a second main
adherence surface on the surface
F3 (32) side; a first peripheral,
inner masking layer (4) made of
opaque material, which is
between the second adherence
surface (32) and the surface F3
(13) or which is on the surface F4
(14), said inner masking layer
being discontinuous; a
discontinuity (51) forming a
signage (5); a second peripheral,
outer masking layer (6) made of
opaque material, between the
first adherence surface (31) and
the surface F2 (12), opposite the
inner masking layer (4) and said
discontinuity (51); and a source
comprising a **curved** organic light-
emitting diode (OLED, 2) **device**,
between the surfaces F2 and F3,
and emitting in the visible
spectrum to illuminate the
signage (5).

PR - CN201620955944U 20160820

AP - [CN201620955944U](#) 20160820

DT - I

PA - ZHEJIANG JIANGONG CURTAIN WALL DECORATION CO LTD

TI - Bright frame aluminum alloy **glass** cushion self compensating system

AB - The utility model relates to a bright frame aluminum alloy **glass** cushion self compensating system, including **glass panels** and aluminum alloy layer board, **glass panels** fixes on the aluminum alloy layer board, is equipped with securing **device** between **glass panels** and aluminum alloy layer board for when guaranteeing that the **glass panels** slope is rotated, can stabilize on the aluminum alloy layer board, securing **device** be the aluminum alloy cushion, the surface and **glass panels**'s the terminal surface of aluminum alloy cushion are closely **laminated**, the arc form is set to its bottom surface, and **curved** protruding source contacts with the aluminum alloy layer board, the utility model discloses an aluminium alloy ex -trusions die sinking design, special through the node has avoided producing easily the problem of contained angle between **glass** and the rubber pad, reduced the damaged probability of **glass**.

11/29 © EPODOC / EPO

PN - [WO2017103425](#) A1 20170622

PR - FR20150062333 20151214

AP - [WO2016FR53364](#) 20161213

DT - **

CT - *[EP]* ISR (A1)
[US2014097636](#) A1 20140410 [Y] (SNIDER DARIN J [US], et al)
[Y] 1-16
* paragraphs [0004] , [0009] , [0081] , [0117] , [123] , [0147] , [176] - [178] - [193]; figure 57 *;
[WO2013093351](#) A1 20130627 [YD] (SAINT GOBAIN [FR])
[YD] 1-16
* page 1, line 14 - line 15 *
* page 1, line 23 - line 24 *
* page 3, line 27 - line 28 *
* page 5, line 26 *
* page 7, line 1 - line 2 *
* page 8 - line I *
* page 9 - paragraph I; figure - *
* page 9, line 32 - line 34 *
* figure -; claim 1 *
* page 10, line 6 *;
[WO2015041106](#) A1 20150326 [A] (ASAHI GLASS CO LTD [JP])
[A] 6,10,11
* paragraphs [0001] , [0020] , [0033] - [0038] - [0042]; figures 2,5 *;
CN202503691U U 20121024 [A] (SAINT GOBAIN)
[A] 9
* paragraph [0082]; figure 3c *;
[FR2519501](#) A1 19830708 [A] (3D VIDEO CORP [US])
[A] 13
* page 1, line 1 - line 2 *
* page 29, line 17 - line 18 *
* page 29, line 21 - line 24 *

* page 27, line 1 *

- CCI - [B32B17/10045](#) ; [B32B17/10541](#) ; [B32B17/10669](#) ; [B32B17/10697](#) ; [G02B27/01](#) ; [G02B27/0101](#)
- CCA - [G02B2027/0112](#) ; [G02B2027/0194](#)
- CI - B32B17/10045 (EP, US)
- B32B17/10541 (EP, US)
- B32B17/10669 (EP, US)
- B32B17/10697 (EP, US)
- G02B27/01 (EP, US)
- G02B27/0101 (EP, KR, US)
- CA - B32B2605/006 (US)
- G02B2027/0112 (EP, KR, US)
- G02B2027/0194 (EP, KR, US)
- PA - SAINT-GOBAIN GLASS FRANCE [FR]
- TI - **LAMINATED** WINDSCREEN OF VEHICLE WITH INTERNAL LUMINOUS SIGNAGE
- AB - The invention relates to a **laminated** windscreen with internal luminous signage for a vehicle, including a first convex **glass panel** (1), with a first main surface (11) F1 and a second opposing main surface (12) F2, and a second convex **glass panel** (1'), with a third main surface (13) F3 and a fourth opposing main surface (14) F4, one of the two **glass panels** being made of mineral **glass**, said first and second **glass panels** being connected to one another via the surfaces F2 and F3 by a **laminating** insert (3, 33, 34, 35) made of a thermoformable, thermoplastic polymer material, said insert comprising: a first main adherence surface on the surface F2 (31) side and a second main adherence surface on the surface F3 (32) side; a first peripheral, inner masking layer (4) made of opaque material, which is between the second adherence surface (32) and the surface F3 (13) or which is on the surface F4 (14), said inner masking layer being discontinuous; a discontinuity (51) forming a signage (5); a second peripheral, outer masking layer (6) made of opaque material, between the first adherence surface (31) and the surface F2 (12), opposite the inner masking layer (4) and said discontinuity (51); and a source comprising a **curved** organic light-emitting diode (OLED, 2) **device**, between the surfaces F2 and F3, and emitting in the visible spectrum to illuminate the signage (5).

12/29 © EPODOC / EPO

- PN - [JP2016145872](#) A 20160812
- PR - JP20150022067 20150206
- AP - [JP20150022067](#) 20150206
- DT - I
- CT - // STSE (A)
[JP2000263734](#) A 00000000 [Y]
[Y] 1-6
* 段落 0 0 1 1-0 0 1 8 *;
[JP2001282146](#) A 00000000 [Y]
[Y] 1-6
* 段落 0 3 5 8-0 3 8 1 *;
[JP2010230816](#) A 00000000 [Y]
[Y] 2-3, 5-6
* 段落 0 1 3 2-0 1 3 7 *
- FI - B29C65/52; G02F1/13&101; G09F9/00&342
- FT - 2H088/FA16; 2H088/FA18; 2H088/FA30; 2H088/MA04; 4F211/AD04; 4F211/AH33; 4F211/TA03;

4F211/TH18; 4F211/TJ22; 4F211/TN42; 4F211/TQ01; 5G435/AA17; 5G435/BB12; 5G435/HH02;
5G435/HH18; 5G435/HH20; 5G435/KK10

- PA - ASAHI GLASS CO LTD
- TI - BONDING **DEVICE** FOR SUBSTRATE AND METHOD FOR MANUFACTURING **LAMINATE**
- AB - PROBLEM TO BE SOLVED: To provide a bonding **device** for a substrate including a plate-like member capable of holding second substrates of various sizes and a method for manufacturing a **laminated** using the bonding **device**. SOLUTION: The bonding starting edge 106A of an image display **panel** 106 is held by a first plate-like member 14 and the bonding ending edge 106B of the image display **panel** 106 is held by a second plate-like member 16. The image display **panel** 106 is bent to a fixed **curvature** through the first and second plate-like members 14 and 16 and arranged to face a **glass** 102. Then, a worker holding a slide member 36 presses the slide member 36 downward along a guide rail 18, according to the advancement of the **glass** 102 and the image display **panel** 106 or the advancement of a pressing roller 20. Thus, the first plate-like member 14, the image display **panel** 106, and the second plate-like member 16 are sequentially pressed toward the **glass** 102 by the roller 20, so that the whole surface of the image display **panel** 106 is bonded to the **glass** 102. SELECTED DRAWING: Figure 1

13/29 © EPODOC / EPO

- PN - [CN105398181](#) A 20160316
- PNFP - CN105398181B B 20180313
- PR - CN201510833063 20151125
- AP - [CN201510833063](#) 20151125
- DT - I
- CT - // STSE (A)
[US2012106197](#) A1 20120503 [A] (LAI CHING-KUN [TW], et al)
[A] 1-10
* 全文 *;
CN204622748U U 20150909 [A] (DONGGUAN MOLEI PHOTOELECTRIC TECHNOLOGY CO LTD)
[A] 1-10
* 全文 *;
CN204620317U U 20150909 [YX] (DONGGUAN MOLEI PHOTOELECTRIC TECHNOLOGY CO LTD)
[Y] 1-5
* 说明书第[0022]段-[0033]段及说明书附图2-10 *
[X] 1-10;
CN203854295U U 20141001 [Y] (SHENZHEN UNIRETE TECHNOLOGY CO LTD)
[Y] 1-5
* 说明书第[0012]段、[0016]段 *
- CI - B32B37/10 (CN)
- B32B37/1284 (CN)
- PA - (A)
WUHAN CHINA STAR OPTOELECTRONICS TECHNOLOGY CO LTD
- TI - (A)
Lamination device for **curved-surface glass** cover plate and flat display **panel** and **lamination** method
- AB - (A)
The invention provides a **lamination device** for a **curved-surface glass** cover plate and a flat display **panel** and a **lamination** method. The **lamination device** comprises a **curved-surface glass** cover plate fixing jig, a joint adhesive bearing jig and a joint adhesive compression

jig, wherein the **curved-surface glass** cover plate fixing jig is provided with a **curved** surface of which the **curvature** is the same as that of the **curved-surface glass** cover plate so as to bear the **curved-surface glass** cover plate; the joint adhesive bearing jig is arranged above the **curved-surface glass** cover plate and used for bearing a joint adhesive; the joint adhesive compression jig is located at the side edge of the joint adhesive bearing jig and used for compressing the joint adhesion born by the joint adhesion bearing jig onto the surface of the **curved-surface glass** cover plate when the **curved-surface glass** cover plate fixing jig moves relative to the joint adhesive bearing jig. According to the **lamination device** for the **curved-surface glass** cover plate and the flat display **panel** and the **lamination** method, the joint adhesive is **laminated** with the **curved-surface glass** cover plate at first, then the **curved-surface glass** cover plate is **laminated** with the flat display **panel**, and non-uniform **lamination** thickness and bubbles of the joint adhesive, caused by gathering of the joint adhesive toward the middle, can be effectively avoided.

14/29 © EPODOC / EPO

- PN - [WO2016031978](#) A1 20160303
- PR - JP20140175227 20140829; JP20140229590 20141112
- AP - [WO2015JP74489](#) 20150828
- DT - *; Rep
- CT - *[JP] ISR (A1)*
[JP2009145795](#) A 20090702 [A] (ISHIYAMA SEISAKUSHO KK)
[A] 1-10
**, paragraphs [0021], [0024] to [0031]; fig. 1 to 2 & KR 10-2009-0066184 A & TW 200928501 A *;*
[WO9917327](#) A1 19990408 [A] (MITSUBISHI ELECTRIC CORP [JP], et al)
[A] 1-10
**, entire text; all drawings & EP 942451 A1 entire text; all drawings *;*
JPH10199422 A 19980731 [A] (SONY CORP)
[A] 1-10
**, entire text; all drawings (Family: none) *;*
JP3071980U U 20000929 [A] (Kabushiki Kaisha Sosei Denshi)
[A] 1-10
**, entire text; all drawings (Family: none) *;*
[JP2015120298](#) A 20150702 [PA] (ASAHI GLASS CO LTD)
[PA] 1-10
**, entire text; all drawings (Family: none) **
- CI - G02F1/13 (EP)
- G02F1/1333 (EP)
- G09F9/00 (EP)
- PA - ASAHI GLASS CO LTD [JP]
- TI - SUBSTRATE BONDING **DEVICE**, **LAMINATE** MANUFACTURING METHOD, AND IMAGE
DISPLAY **DEVICE** MANUFACTURING METHOD
- AB - In order to accurately bond together two substrates without air bubbles entering the adhesive layer interface between the first substrate and the second substrate even when the first substrate is warped or when warping occurs during bonding, this substrate bonding **device** is provided with a flexible flat plate-shaped member 12 which holds a liquid crystal **panel** 106 by suction, a hanger unit 14 which suspends the flexible plate-shaped member 12 on a window **glass** 102, a **curvature** member 24 which causes the flexible plate-shaped member 12 to **curve**, and a roller 16 which presses from the back surface of the flexible plate-shaped member 12 towards the window **glass** 102 to apply a

bonding load.

15/29 © EPODOC / EPO

PN - [JP2015196620](#) A 20151109
PR - JP20140075255 20140401
AP - [JP20140075255](#) 20140401
DT - I
CCA - [Y02P40/57](#)
CA - Y02P40/57 (EP)
FI - C03B33/02; C03C19/00&Z; C03C21/00&101; G02F1/1333; G06F3/041&460; G06F3/041&495
FT - 2H189/AA16; 2H189/CA21; 2H189/HA03; 2H189/LA02; 4G015/FA01; 4G015/FB01; 4G015/FB02; 4G015/FC10; 4G059/AA08; 4G059/AB01; 4G059/AB03; 4G059/AB09; 4G059/AB11; 4G059/AB17; 4G059/AC08; 4G059/AC11; 4G059/AC12; 4G059/AC16; 4G059/HB03; 4G059/HB13; 4G059/HB14
PA - TOPPAN PRINTING CO LTD
TI - COVER **GLASS** AND DISPLAY **DEVICE**
AB - PROBLEM TO BE SOLVED: To provide a cover **glass** having high impact resistance on six faces of front and rear surfaces and side faces even when subjected to multiple-mounting by using a large chemically strengthened **glass** substrate and subsequently subjected to cutting of the multiple-mounted **glass** substrate into respective pieces. SOLUTION: A cover **glass** is **laminated** on a touch **panel** having regions divided into a display region and a non-display region, in which a decorative frame region is formed on one face of a **glass** substrate 1 having chemically strengthened layers 2 on the front and rear faces thereof such that the decorative frame region faces the non-display region, peripheral ends of the **glass** substrate 1 on the side of the decorative frame region are chamfered in the cross sectional direction with a **curved** surface shape of a **curvature** radius of R, peripheral ends on the other side are chamfered in the cross sectional direction with a **curved** surface shape of a **curvature** radius of R, and an interval between an end of the **curved** surface with the **curvature** radius of R and an end of the **curved** surface with the **curvature** radius of R is made of a vertical plane. In the cover **glass**, the **curvature** radii of R and R of the **glass** substrate 1 are 100 to 200 μm , and the thickness D of the chemically strengthened layers 2 is 18 to 35 μm .

16/29 © EPODOC / EPO

PN - [KR20150105887](#) A 20150918
PR - KR20140028017 20140310
AP - [KR20140028017](#) 20140310
DT - I
CI - G06F3/041 (KR)
CA - G06F2203/04103 (KR)
PA - KIM IN SOO [KR]
TI - **LAMINATION DEVICE OF CURV TYPE TOUCH SCREEN PANEL**
AB - The present invention relates to a **lamination device** for a **curved**-type touch screen **panel**. The **lamination device** includes: a base frame having a mount space formed on an upper portion thereof; a rotation drum which is rotatably installed on the mount space of the base frame, and includes a vacuum adsorption unit which fixates an ITO sensor and is formed on the outside side thereof; a rotation unit which is accommodated in the base frame, and rotates the rotation drum; a vacuum means which is accommodated in the

base frame, and adsorbs the ITO sensor located on the vacuum adsorption unit; and a fixation body which is installed on an upper portion of the base frame, and includes a compression roller which compresses the ITO sensor and a cover **glass** arranged on the ITO sensor. According to an embodiment of the present invention, not only the ITO sensor can be accurately attached to a designated location of the cover **glass** through the vacuum adsorption unit of and a location guide tool of the rotation drum, but also the quality of products can be increased.

17/29 © EPODOC / EPO

- PN - [CN102983213](#) A 20130320
- PR - CN201210464012 20121116
- AP - [CN201210464012](#) 20121116
- DT - I
- CT - || STSE (A)
[CN102709366](#) A 20121003 [A] (SHENZHEN TRONY SOLAR CORP)
 [A] 1-7
 * 全文 *;
[EP1564816](#) A1 20050817 [Y] (CURVET SPA [IT])
 [Y] 1-7
 * 权利要求31、说明书第0018、0024-0025、0031、0036、0043段 *;
[CN102117864](#) A 20110706 [Y] (YINGLI ENERGY CHINA CO LTD)
 [Y] 1-7
 * 说明书第0008-0026段 *;
[CN101980370](#) A 20110223 [A] (SHENZHEN TRONY SOLAR CORP)
 [A] 1-7
 * 全文 *;
 CN201918408U U 20110803 [A] (HEBEI DONGXU INVEST GROUP CO, et al)
 [A] 1-7
 * 全文 *
- CCA - [Y02E10/50](#) ; [Y02P70/50](#)
- CA - Y02E10/50 (EP)
 - Y02P70/50 (EP)
- PA - CHINA SUNERGY NANJING CO LTD
- TI - **Lamination** preparation process of **curved**-surface double- **glass** photovoltaic module
- AB - The invention discloses a **lamination** preparation process of a **curved**-surface double-**glass** photovoltaic module. Firstly, a layer of binding material covers face plate bent **glass**, a solar cell is arranged on the binding material, a layer of binding material covers the solar cell, and then rear plate bent **glass** covers on the binding material. After the **panel** bent **glass** is aligned to the rear plate bent **glass**, a vacuum rubber ring is sleeved on the periphery of the face plate bent **glass** and the rear plate bent **glass**, the solar cell and the two layers of binding materials are enabled to be in a closed space formed by the face plate bent **glass**, the rear plate bent **glass** and the vacuum rubber ring, the closed space is vacuumized then, the face plate bent **glass** and the rear plate bent **glass** compact the solar cell and the binding materials arranged between the face plate bent **glass** and the rear plate bent **glass** to prevent relative sliding, and an assembly to be packaged is obtained. The assembly to be packaged is placed into a high-pressure autoclave **laminating** machine to be carried out with **lamination**, and the vacuum rubber ring is removed and the **curved**-surface double- **glass** photovoltaic module is obtained after the **lamination**. The **lamination** preparation process of the **curved**-surface

double- **glass** photovoltaic module can utilize one **device** to prepare photovoltaic modules with different radiuses of **curvature**.

18/29 © EPODOC / EPO

PN - [KR20120054521](#) A 20120530

PNFP - KR102076486B B1 20200212

PR - JP20100258991 20101119

AP - [KR20110116743](#) 20111110

DT - I

CT - // STSE (A)
[US5013967](#) A 19910507 [] (MITSUBISHI CABLE IND LTD [JP]);
[JP2010245032](#) A 20101028 [] (SEMICONDUCTOR ENERGY LAB);
[US2005110384](#) A1 20050526 [];
[JP2006331854](#) A 20061207 [] (MATSUSHITA ELECTRIC WORKS LTD);
[JP2010528448](#) A 20100819 [];
[JP2009289742](#) A 20091210 [] (FUJITEC INTERNAT INC, et al);
[KR20100011597](#) A 20100203 [] (LG DISPLAY CO LTD [KR]);
[KR20100051638](#) A 20100517 [] (SUMITOMO CHEMICAL CO [JP])

CCI - [H01L51/524](#)

CCA - [H01L2251/5361](#)

CI - H01L51/524 (EP, KR)

CA - F21Y2105/10 (KR)
F21Y2115/15 (KR)
F21Y2115/20 (KR)
H01L2251/5361 (EP, KR)

PA - (A)
SEMICONDUCTOR ENERGY LAB [JP]

TI - (A B1)
LIGHTING **DEVICE**

AB - (A)
PURPOSE: A lighting apparatus is provided to control color of radiation by **laminating** a plurality of electroluminescence layers in which emitted light color is different and to improve durability by sealing an electroluminescence film within a **glass** case.
CONSTITUTION: A first electroluminescence layer(106) is pinched between a first electrode and a second electrode. A light emitting **device**(132) comprises the first electroluminescence layer. A light-emitting **panel** comprises the light emitting **device**. A **glass** case(200) forms a first terminal electrode and a second terminal electrode. The **glass** case has a **curved** surface. A light reflector is installed along the **curved** surface of the **glass** case. The first electrode and the first terminal electrode are electrically connected. The second electrode and the second terminal electrode are electrically connected.

19/29 © EPODOC / EPO

PN - [DE102007042244](#) A1 20090312

PNFP - DE102007042244 B4 20190124

PR - DE20071042244 20070906

AP - [DE20071042244](#) 20070906

DT	- *; Rep
CT	- // STSE (A1 B4) DE3716860 C2 19891207 []; DE2524461 A1 19751218 [] (OPTICAL COATING LABORATORY INC); DE1596810 A1 19710401 [] (GLAVERBEL)
CCI	- C03C17/34
CCA	- C03C2217/72 ; C03C2217/734
CI	- C03C17/34 (EP)
CA	- C03C2217/72 (EP) - C03C2217/734 (EP)
PA	- (A1 B4) SCHOTT AG [DE]
TI	- (A1) Semi-transparent facade element useful in shop-window with thermal insulation for the external area, comprises first and second disk-shaped elements, and a device for connecting the disk-shaped elements with an interval to each other
AB	- (A1) The semi-transparent facade element useful in shop-window with thermal insulation for the external area, comprises a first- (10) and a second disk-shaped element (20), and a device (105) for connecting the disk-shaped elements with an interval to each other. The disk-shaped elements partially have a coating, which leads to a color effect in the visible wavelength region for a viewer. The first disk-shaped element comprises a first substrate with a first- (1) and a second surface (2), which is turned to the second disk-shaped element. The second disk-shaped element comprises a second substrate. The semi-transparent facade element useful in shop-window with thermal insulation for the external area, comprises a first- (10) and a second disk-shaped element (20), and a device (105) for connecting disk-shaped elements with an interval to each other. The disk-shaped elements partially have a coating, which leads to a color effect in the visible wavelength region for a viewer. The first disk-shaped element comprises a first substrate with a first- (1) and a second surface (2), which is turned to the second disk-shaped element. The second disk-shaped element comprises a second substrate with a third- (3) and a fourth surface (4). The absorption of the coating in the visible wavelength region is less than 1% of the light incident on the coating. A transition of high reflectivity to a low reflectivity is set within the visible wavelength region of 420-700 nm through the coating and causes color effect. The coating has two sub-layers. A second sub-layer is applied on a first sub-layer. The second sub-layer is the last layer of the coating turned to the gaseous medium and is T-layer or M-layer with a refractive index. The refractive index (n _h) of the T-layer is 1.9-2.3, and the refractive index (n _m) of the M-layer is 1.6-1.8. The first- and/or the second sub-layer consist of several individual layers. The third surface is turned to the second surface of the first disk-shaped element. The coating is applied on the first surface and/or the second surface of the first substrate. The substrates have boundary with a laminated glass and with the coating. The second surface has a coating with low emissivity and/or a sun-protective layer. The third surface has a further coating, which is a thermal-protective layer. The coating is applied on the third- and/or the fourth surface. The first- and/or the second substrate is a single pane glass , a single pane security glass , an annealed single pane glass , a composite safety glass , a composite safety glass having a single pane security glass and/or a composite safety glass having an annealed single pane glass . The disk-shaped elements are a flat disk or a curved disk. The connecting device comprises a metal spacer element and a sealing. The coating and/or further coating are a layer

applied by sputtering or by spraying and are an immersion layer. The first- and/or the second disk-shaped element comprise lamp, which is a light emitting diode.

20/29 © EPODOC / EPO

- PN - [US6009726](#) A 20000104
- PR - DE19971015778 19970416
- AP - [US19980059963](#) 19980414
- DT - **
- CT - *// STSE (A)*
[US3573889](#) A 19710406 [] (MCMMASTER HAROLD A, et al);
[US4632691](#) A 19861230 [] (SMITH QUINTIN R [US], et al);
[US4738704](#) A 19880419 [] (VANASCHEN LUC [BE], et al);
[US4746348](#) A 19880524 [] (FRANK ROBERT G [US]);
[US4778506](#) A 19881018 [] (PETITCOLLIN JEAN-MARC [FR], et al);
[US4828598](#) A 19890509 [] (IMAMURA TAKAHARU [JP], et al);
[US4918946](#) A 19900424 [] (VANASCHEN LUC [BE], et al);
[US5286271](#) A 19940215 [] (RUETER RICHARD E [US], et al);
[US5669952](#) A 19970923 [] (CLAASSEN GEORGE R [US], et al);
[US5713976](#) A 19980203 [] (KUSTER HANS-WERNER [DE], et al);
[US5833729](#) A 19981110 [] (MEUNIER OLIVIER [FR], et al);
[EP0668249](#) A2 19950823 [] (PPG INDUSTRIES INC [US])
- CCI - [C03B23/0305](#) ; [C03B23/035](#) ; [C03B23/0357](#) ; [C03B35/145](#) ; [C03B35/202](#)
- CCA - [C03B2225/02](#)
- CI - C03B23/0305 (EP)
- C03B23/035 (EP)
- C03B23/0357 (EP)
- C03B35/145 (EP)
- C03B35/202 (EP)
- CA - C03B2225/02 (EP)
- PA - FLACHGLAS AUTOMOTIVE GMBH [DE]
- TI - **Glass** bending process and apparatus
- AB - Process for bending the outer **glass pane** and the inner **glass pane** of **laminated safety glass panes** bend with predefined **curvature** geometry. The press-bending system incorporates a bending station, a discharge station, as well as between bending station and discharge station, a conveyor shuttle. The **glass panes** to be bent, heated to bending temperature, are introduced singly into the bending station with the aid of a transfer line and are bent in it, taking account of the predefined **curvature** geometry of the **laminated safety glass panes**. The outer **glass pane** and the inner **glass pane** are subjected to optimizing bending at a temperature, which is in the lower bending temperature range, in the discharge station assigned to them. To carry out optimizing bending, the **glass panes** are lifted off the conveyor shuttle with the aid of a take-off **device**, which take-off **device** possesses an optimizing contour at least in the edge area. The optimizing bending is carried out by placing the **glass panes** on the optimizing contour. Also a press-bending system to carry out the process is indicated.

21/29 © EPODOC / EPO

- PN - [JP2007322679](#) A 20071213
- PR - JP20060152097 20060531

AP - [JP20060152097](#) 20060531

DT - I

CT - // STSE (A)
[JP2004045518](#) A 20040212 [] (BRIDGESTONE CORP);
[JP2003197056](#) A 20030711 [] (SEIKO EPSON CORP)

FI - G02F1/167; G06F3/041&320F; G06F3/041&350C; G09F9/00&366A; G02F1/165; G02F1/1671; G02F1/1676; G02F1/1681; G06F3/041&460; G06F3/041&495; G06F3/041&640; G06F3/041&650

FT - 5B068/AA32; 5B068/BB01; 5B068/BC07; 5B087/AA04; 5B087/AB01; 5B087/AE09; 5G435/AA06; 5G435/BB11; 5G435/EE49; 2K101/AA06; 2K101/BA02; 2K101/BB34; 2K101/BB43; 2K101/BB91; 2K101/BB92; 2K101/BB96; 2K101/BB97; 2K101/BB99; 2K101/BC03; 2K101/BC28; 2K101/BD24; 2K101/BD27; 2K101/BD33; 2K101/BE07; 2K101/BE21; 2K101/BE22; 2K101/BE26; 2K101/BE27; 2K101/BE35; 2K101/BF42; 2K101/BF43; 2K101/BF45; 2K101/EB51; 2K101/EB84; 2K101/EB92; 2K101/EC22; 2K101/EF00; 2K101/EG26; 2K101/EG27; 2K101/EG28; 2K101/EG41; 2K101/EG52; 2K101/EG54; 2K101/EG65; 2K101/EH02; 2K101/EH03; 2K101/EH04

PA - BRIDGESTONE CORP

TI - TOUCH **PANEL** INTEGRATED TYPE INFORMATION DISPLAY **DEVICE**

AB - PROBLEM TO BE SOLVED: To provide a touch **panel** integrated type information display **device** comprising a touch **panel** securing characteristics such as slide resistance that the touch **panel** is requested to have and a display **device** by optimizing the material, composition, etc., of a hard coat of the touch **panel** even when the touch **panel** is combined with the display **device** having a **curved**-surface type **glass** substrate, **curved**-surface type resin substrate, or flexible substrate.

- SOLUTION: The touch **panel** 13 of the touch **panel** integrated type information display **device** 11 constituted by arranging the display **device** 12 which displays information and the touch **panel** 13 inputting the information to be displayed by the display **device** 12 in one body has a **laminated** structure of a hard coat layer 14, a PET substrate 15, a stress reducing layer 16, a PET substrate 17, a transparent conductive layer 18, a dot spacer 19, a transparent conductive layer 20, and a **glass** substrate 2 in order from the top, and is characterized in that the stress reducing layer 16 has a film thickness of 10 to 50 μm and Vickers hardness of 38 to 240 N/mm<SP>2</SP>.

- COPYRIGHT: (C) 2008,JPO&INPIT

22/29 © EPODOC / EPO

PN - [JP2001042303](#) A 20010216

PR - JP19990221754 19990804

AP - [JP19990221754](#) 19990804

DT - I

FI - G02F1/13&101; G02F1/1333&500; G09F9/00&302; G09F9/00&303Z

FT - 2H088/EA14; 2H088/EA15; 2H088/EA16; 2H088/EA18; 2H088/EA19; 2H088/FA06; 2H088/FA07; 2H088/FA10; 2H088/FA11; 2H088/FA15; 2H088/FA16; 2H088/FA17; 2H088/FA19; 2H088/FA27; 2H088/FA30; 2H088/HA08; 2H088/HA13; 2H088/HA21; 2H088/HA25; 2H088/HA28; 2H088/KA01; 2H088/MA16; 2H090/JA09; 2H090/JA11; 2H090/JA13; 2H090/JA15; 2H090/JB02; 2H090/JC14; 2H090/JC17; 2H090/JC18; 2H090/JD13; 2H090/LA03; 2H090/LA04; 2H090/LA11; 2H090/LA12; 2H090/LA16; 2H090/LA20; 2H190/JA09; 2H190/JA11; 2H190/JA13; 2H190/JA15; 2H190/JB02; 2H190/JC14; 2H190/JC17; 2H190/JC18; 2H190/JD13; 2H190/LA03; 2H190/LA04; 2H190/LA11; 2H190/LA12; 2H190/LA16; 2H190/LA20; 5G435/AA04; 5G435/BB01; 5G435/BB12; 5G435/BB16; 5G435/BB17; 5G435/FF05; 5G435/GG02; 5G435/GG04; 5G435/GG23; 5G435/GG28; 5G435/GG46

PA - SEIKO EPSON CORP
 TI - ELECTRO-OPTIC **DEVICE** AND ITS PRODUCTION
 AB - PROBLEM TO BE SOLVED: To prevent a corner part of a substrate from generating cracks or chips by radiusing the corner part of the substrate. SOLUTION: A liquid crystal **panel** 11 is produced by disposing and **laminating** a pair of light-transmitting substrates with a sealing material 2, namely, an element substrate 1a to mount MIM elements and a counter substrate 1b facing the element substrate 1a. In this method, the liquid crystal **panel** 11 is obtained by cutting corners of the liquid crystal **panel** mother material (from 1a-1 to 1a-4 and 1b-1 to 1b-4) along a desired **curved** line R having (r) mm radius of **curvature**. The obtained liquid crystal **panel** 11 has a smooth cut face and no sharp apex in the corner (from 1a-1 to 1a-4 to 1b-1 to 1b-4) and has high shock resistance so that even in an assembling process of an electro- optic **device** in the succeeding process, the corners (from 1a-1 to 1a-4 and 1b-1 to 1b-4) are hardly broken. A proper range of the radius of **curvature** (r) mm is expressed by $t/2 \leq r \leq 4$, wherein (t) mm is thickness of the **glass** substrate.

23/29 © EPODOC / EPO

PN - [JPH06186418](#) A 19940708
 PR - JP19920195964 19920630
 AP - [JP19920195964](#) 19920630
 DT - I
 FI - G02B5/26; G02B5/28
 FT - 2H048/FA05; 2H048/FA07; 2H048/FA09; 2H048/FA24; 2H048/GA04; 2H048/GA09; 2H048/GA30; 2H048/GA34; 2H048/GA60; 2H048/GA61; 2H148/FA05; 2H148/FA07; 2H148/FA09; 2H148/FA24; 2H148/GA04; 2H148/GA09; 2H148/GA30; 2H148/GA34; 2H148/GA60; 2H148/GA61
 PA - VICTOR COMPANY OF JAPAN
 TI - PRODUCTION OF DICHROIC MIRROR
 AB - PURPOSE:To provide a producing method making flatness of a dichroic mirror excellent, in a production process of the dichroic mirror reflecting or transmitting the light transmitted through a liquid crystal **panel** used in a projection type liquid crystal display **device**. CONSTITUTION:When a substrate 21 consisting of white plate **glass** is polished, it is finished in a **curved** shape opposite to the **curved** shape generated when a dielectric multilayer film has been formed on the substrate worked to a plane, and the dielectric multilayer film 22 alternately **laminated** a SiO₂ film and a TiO₂ on the substrate 21 by vacuum deposition is formed to produce the dichroic mirror, thus the flatness of the dichroic mirror is excellent by compression stress or tensile stress which the dielectric multilayer film 22 has.

24/29 © EPODOC / EPO

PN - [JPH07301811](#) A 19951114
 PR - JP19940094974 19940509
 AP - [JP19940094974](#) 19940509
 DT - I
 FI - G02F1/13&101; G02F1/1339&505
 FT - 2H088/FA01; 2H088/FA16; 2H088/MA17; 2H088/MA20; 2H089/NA45; 2H089/NA48; 2H089/NA55; 2H089/NA60; 2H089/QA04; 2H089/QA12; 2H089/QA14; 2H189/FA56; 2H189/FA65; 2H189/FA79; 2H189/FA91; 2H189/FA92; 2H189/HA12; 2H189/HA14

PA - ASAHI GLASS CO LTD; MITSUBISHI ELECTRIC CORP

TI - PRODUCTION OF LIQUID CRYSTAL DISPLAY **PANEL** AND **DEVICE** THEREFOR

AB - PURPOSE: To apply uniform pressure distribution on a whole surface of a liquid crystal **panel**, thereby to reduce **curvature** and to obtain an uniform cell gap by making the liquid crystal **panel** and flat plates above and below the **panel** to equal sizes and providing cushioning materials on both sides or on one side of the flat plate.
 CONSTITUTION: The cushioning material 4 composed of a rubber sheet, a lower flat plate 2 composed of ceramic plate, plural liquid crystal **panels** 1 formed by superposing two sheets of **glass** plate via a sealant, an upper flat plate 3 composed of a ceramic plate and the cushioning material 4 composed of a rubber sheet are successively **laminated** on a lower base plate 5. The liquid crystal **panels** 1 are **laminated** while inserting a spacer between the liquid crystal **panels** 1 to form a stacked matter. At this time, the surfaces of the liquid crystal **panels** 1 and the surfaces of the lower flat plate 2, the upper flat plate 3 and the upper and lower cushioning materials 4 are respectively made to be equal sizes and after **laminating**, end face setting is executed by pressing a end face setting mechanism 10 toward arrow directions from back and forth, left and right. Further, pressing and heating are simultaneously applied to the stacked matter by the base plates 5 movable up and down, thereby the sealants are hardened to form the liquid crystal display **panel**.

25/29 © EPODOC / EPO

PN - [GB1413320](#) A 19751112

PR - GB19720060129 19721229

AP - [GB19720060129](#) 19721229

DT - *; Rep

CCI - [B29C43/3607](#) ; [B29C43/56](#) ; [B29C70/865](#) ; [B30B1/34](#) ; [B30B15/06](#) ; [B32B37/26](#)

CI - B29C43/3607 (EP)
 - B29C43/56 (EP)
 - B29C70/865 (EP)
 - B30B1/34 (EP)
 - B30B15/06 (EP)
 - B32B37/28 (US)
 - B32B15/04 (US)
 - B32B15/20 (US)
 - B32B37/26 (EP)

CA - B32B2307/306 (US)
 - B32B2311/24 (US)

PA - POLYFONT SA

TI - PROCESS AND APPARATUS FOR MANUFACTURING FLAT PLASTICS-COATED OBJECTS

AB - 1413320 **Laminating** method and press POLYFONT 29 Dec 1972 60129/72 Heading B5N In a process for the production of a flat article having a finish on at least one of its surfaces, wherein a blank of the article is arranged between a pair of press plates with a layer of material for forming the finish disposed between the blank and at least one of the press plates, and pressure is applied to one of the press plates so as to compress the blank and the layer(s), the pressure being applied initially throughout a first zone extending linearly across a part of the press plate and subsequently throughout a zone extending linearly across a part of the press plate and located beside the first zone, the press plate being deformed during the initial application of pressure thereto. A press

for carrying out the process includes a pair of press plates, one of which is flexible, and a **device** for applying pressure to said flexible plate, said **device** comprising first means for applying pressure to a first zone extending linearly across a part of the flexible plate, and second means for thereafter applying pressure to the flexible pressure plate on a zone extending across a part of the flexible press plate and located beside the first zone. The press described comprises a frame 11 having a base-plate 12 equipped with heating resistances 14 and carrying a mould 13 mounted thereon, the upper plate 16 being formed by interposing a corrugated sheet 18 between two planar sheets 17 and 19 and carrying a vertically depending lip 41, e.g. of rigid rubber, to seal the space 43 between the two press plates when the press is closed, heating resistances 20 for the upper plate being embedded in compressable insulation material 21. The upper plate 16 is supported from cross-pieces of the frame 11 by a row of hydraulic jacks 22, the axes of which intersect the longitudinal centre line of the plate 16, a further row of jacks 31 being provided on each side of the row of jacks 22. Orifices 45 drilled in the lower plate and connected to pump 44 are provided to enable a partial vacuum to be established in space 43. To permit complete descent of the plate 16, pad 42 is inflatable by a pump connected to the interior thereof by conduits. In operation of the press, all the jacks are operated to lower plate 16 to the desired level, the jacks 22 alone then operating to lower the longitudinal centre line of plate 16 and thus cause the plate to assume a convex form. The descent of the plate 16 continues and the members 34 engage the upper ends of their shackles 37, 38 so that the jacks 31 start to retain the edges of plate 16, pressure having been supplied to the pistons, to accentuate the convex form of the plate. Plate 16 then contacts the upper surface of the article 1 being processed in zone extending across its central part, vacuum in the space 43 extending the jacks 31 without reversal of the pressure fluid connections to the latter and thus decreases the **curvature** of plate 16. The pressure fluid connections to the jacks 31 are then reversed and the jacks cease to retain the edges of the plate, pressure being applied by the members 34 travelling down within their shackles. In a large press, an intermediate row of jacks 39 is provided between the row of jacks 22 and each row of jacks 31, the jacks 39 being operated prior to the reversal of the pressure fluid connections to jacks 31, the jacks 39 increasing the zone of contact between the plate 16 and the article. In the embodiment described, the inside surfaces of the mould 1 are provided with a coating consisting of a layer 6 of thermoplastic or thermosetting material, e.g. a thermoplastic polyester, and the layer flocked with **glass** fibres 7, the following components being stacked in the mould prior to the application of heat and pressure, a **glass** fibre fabric 8, a **laminated** wood **panel** 9, a further layer 10 of thermoplastic or thermosetting material and a **glass** fibre fabric 11.

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PN - [GB2402469](#) A 20041208
 PNFP - GB2402469 B 20070523
 PR - GB20030013055 20030606
 AP - [GB20030013055](#) 20030606
 DT - *; Rep
 CT - || STSE (A B)
[GB407596](#) A 00000000 [];
[GB1345332](#) A 00000000 [];
[GB2246856](#) A 00000000 [];
[GB2377753](#) A 00000000 [];
[US2002170215](#) A1 00000000 []

CCI - [F24C7/004](#)

CCA - [H05B2203/003](#)

CI - F21S10/007 (GB)
 - F21S10/04 (GB)
 - F24C7/004 (EP, GB)
 - F24C7/06 (GB)
 - H05B3/74 (GB)
 - H05B3/84 (GB)

CA - H05B2203/003 (EP)

PA - (A B)
 BASIC HOLDINGS [IE]

TI - (A)
 Electrical heating apparatus with a projected image
 - (B)
 Electric heating apparatus

AB - (A)
 An electrical heating apparatus with a projected image comprises a radiant heating **device** 14,22, 40 and an image projection assembly. Radiant heating devices 14, 22, 40 comprise either of a **glass panel** heater 14, 22 or a **laminated** heating **device** 40 having an electrically insulating layer (44, fig 8) with electrically conductive elements (42). Image projection assembly comprises of light from a source 16 being modified and projected on to a viewing screen 22 which may also be the **glass panel** heater 22. A means 18 for modifying the light comprises a rotating shaft (26, figs 4-6) having a plurality of reflective radially extending pieces of material (30) and causes light to be reflected towards a planar or **curved** reflective means 20 and hence to screen 22, and to a simulated fuel bed 24. Reflective means 20 may have cut out flame shapes so that screen 22 may provide an image of simulated flames. Other abstract images may also be provided. Shaft (26) may be connected to a flexible bush (32) at one end and its other end in another bush (36) in a bracket (34) with a slot (38) so that the shaft may be displaceable to permit changing of the light source 16.

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PN - [DE10327074](#) B3 20050616

PR - DE20031027074
 20030613; DE20021050029
 20021026; DE20031025903 20030605

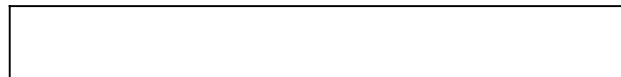
AP - [DE20031027074](#) 20030613

DT - *; Rep

CT - || STSE (B3)
[DE19701862](#) A1 00000000 [];
[DE10145067](#) A1 00000000 [];
 DE9302366U U1 00000000 []

CCI - [E04B7/00](#) ; [E04D3/06](#) ;
[E04F11/1817](#) ; [E04F11/1851](#) ;
[E04F11/1853](#) ; [E04F11/1863](#) ;
[E06B3/5436](#) ; [E06B3/5445](#)

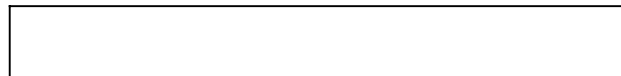
CCA - [E04D2003/065](#) ; [E04F2011/1831](#) ;
[F16B5/0685](#)



- CI
 - E04B7/00 (EP)
 - E04D3/06 (EP)
 - E04F11/1817 (EP)
 - E04F11/1851 (EP)
 - E04F11/1853 (EP)
 - E04F11/1863 (EP)
 - E06B3/5436 (EP)
 - E06B3/5445 (EP)
- CA
 - E04D2003/065 (EP)
 - E04F2011/1831 (EP)
 - F16B5/0685 (EP)
- PA
 - ORBACH JOACHIM [DE] ;
RADERMACHER JOACHIM [DE]
- TI
 - **Device** for holding plates such as toughened safety **glass, laminated glass**, solar **panels** or **laminated panels** on support elements, especially posts
- AB
 - **Device** for holding plates (1) on support elements (6), especially posts, arranged next to the plates in the plate plane or laterally offset from the plate plane comprises holding devices (2) with a mounting part (3) at one end and a screw part (5) at the other end. The mounting part has a disk (3b, 7) with a surface touching the plate. The screw part is joined at an angle or by a **curve** or without an angle or **curve** to an arm (4) extending toward the plate edge (1a) and molded laterally on the mounting part. The plate weight is supported at one side on the support elements by holding devices touching the same side of the plate. Independent claims are also included for alternative holding devices. Preferred Features: The arm of the mounted holder runs a distance from the plate.

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- PN
 - [DE10325903](#) A1 20050105
- PNFP
 - DE10325903 B4 20050414
- PR
 - DE20031025903



	20030605; DE20021050029 20021026
AP	- DE20031025903 20030605
DT	- *; Rep
CT	- <i>// STSE (A1 B4)</i> DE19701862 A1 19980910 [] (KRAUSS INNOVATION LTD [CA]); DE10145067 A1 20030424 [] (WACHENFELD WALTER [DE])
CCI	- B32B17/10293 ; E04B7/00 ; E04D3/06 ; E04F11/1817 ; E04F11/1851 ; E04F11/1853 ; E06B3/5436 ; E06B3/5445
CCA	- E04D2003/065 ; E04F2011/1831 ; F16B5/0685
CI	- B32B17/10293 (EP) - E04B7/00 (EP) - E04D3/06 (EP) - E04F11/1817 (EP) - E04F11/1851 (EP) - E04F11/1853 (EP) - E06B3/5436 (EP) - E06B3/5445 (EP)
CA	- E04D2003/065 (EP) - E04F2011/1831 (EP) - F16B5/0685 (EP)
PA	- <i>(A1 B4)</i> ORBACH JOACHIM [DE]; RADERMACHER JOACHIM [DE]
TI	- <i>(A1 B4)</i> Device for holding plates such as toughened safety glass , laminated glass , solar panels or laminated panels on support elements, especially posts
AB	- <i>(A1)</i> Device for holding plates (1) on support elements (6), especially posts, arranged next to the plates in the plate plane or laterally offset from the plate plane comprises holding devices (2) with a mounting part (3) at one end and a screw part (5) at the other end. The mounting part has a disk (3b, 7) with a surface touching the plate. The screw part is joined at an angle or by a curve or without an angle or curve to an arm (4) extending

toward the plate edge (1a) and molded laterally on the mounting part. The plate weight is supported at one side on the support elements by holding devices touching the same side of the plate. Independent claims are also included for alternative holding devices. Preferred Features: The arm of the mounted holder runs a distance from the plate.

- (B4)

Device for holding plates (1) on support elements (6), especially posts, arranged next to the plates in the plate plane or laterally offset from the plate plane comprises holding devices (2) with a mounting part (3) at one end and a screw part (5) at the other end. The mounting part has a disk (3b, 7) with a surface touching the plate. The screw part is joined at an angle or by a **curve** or without an angle or **curve** to an arm (4) extending toward the plate edge (1a) and molded laterally on the mounting part. The plate weight is supported at one side on the support elements by holding devices touching the same side of the plate. - Independent claims are also included for alternative holding devices. Preferred Features: The arm of the mounted holder runs a distance from the plate.

TXT - through hole (B32B) undercut

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PN - [DE10258683](#) B3 20040826
PR - DE20021058683 20021213
AP - [DE20021058683](#) 20021213
DT - *; Rep
CT - || STSE (B3)
[DE19949057](#) A1 20010426 []
(DORMA GMBH & CO KG [DE]);
[DE10050260](#) A1 20020418 []



(ORBACH JOACHIM [DE], et al);
DE29911296U U1 19990909 []
(ORBACH MARINA [DE])

- CCI - [E04B7/00](#) ; [E04D3/06](#) ;
[E04F11/1817](#) ; [E04F11/1851](#) ;
[E04F11/1853](#) ; [E06B3/5436](#)
- CCA - [E04D2003/065](#) ; [E04F2011/1831](#)
- CI - E04B7/00 (EP)
- E04D3/06 (EP)
- E04F11/1817 (EP)
- E04F11/1851 (EP)
- E04F11/1853 (EP)
- E06B3/5436 (EP)
- CA - E04D2003/065 (EP)
- E04F2011/1831 (EP)
- PA - ORBACH JOACHIM [DE] ;
RADERMACHER JOACHIM [DE];
FECHNER JOACHIM [DE]
- TI - **Device** for holding plates such as
toughened safety **glass**, **laminated**
glass, solar **panels** or **laminated**
panels on support elements,
especially posts
- AB - **Device** for holding plates (1) on
support elements (6), especially
posts, arranged next to the
plates in the plate plane or
laterally offset from the plate
plane comprises holding devices
(2) with a mounting part (3) at
one end and a screw part (5) at
the other end. The mounting part
has a disk (3b, 7) with a surface
touching the plate. The screw
part is joined at an angle or by
a **curve** or without an angle
or **curve** to an arm (4) extending
toward the plate edge (1a) and
molded laterally on the
mounting part. The plate weight
is supported at one side on the
support elements by holding
devices touching the same side
of the plate. Independent claims
are also included for alternative
holding devices. Preferred
Features: The arm of the
mounted holder runs a distance
from the plate.

