

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 9] (bend+ or curv+) and thin and glass and mold and (male or upper) and ring

Results in EPODOC 5

[SS 10] ..li



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PN - [US4437872](#) A 19840320

PR - US19810268535
19810529; US19800118822
19800205

AP - US19810268535 19810529

DT - *

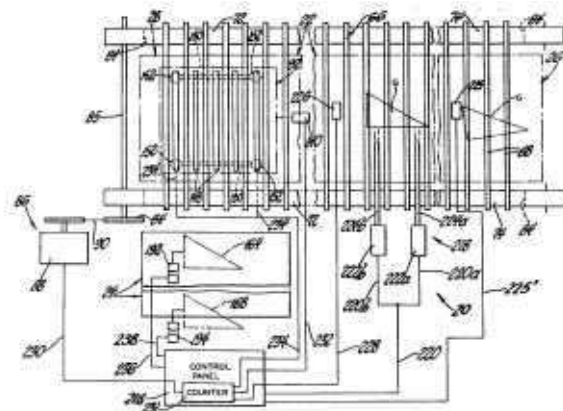
CCI - [C03B23/0357](#) ; [C03B23/0252](#) ;
[C03B23/03](#) ; [C03B27/0417](#) ;
[C03B27/048](#) ; [C03B29/08](#) ;
[C03B35/145](#) ; [C03B35/164](#) ;
[C03B35/202](#) ; [C03B35/24](#) ;
[C03B40/005](#)

CCA - [C03B2225/02](#)

PA - MCMASTER HAROLD; NITSCHKE
NORMAN CARL; NITSCHKE JOHN
STEPHEN

TI - Apparatus for **bending** and
tempering **glass** sheets

AB - Sheet **glass** is heated during
conveyance within a furnace
housing having a fixed roof and
vertically movable side doors
that define side slots through
which ends of conveyor rolls
project outwardly to be
supported and frictionally
driven by continuous drive loops
slidably driven over external

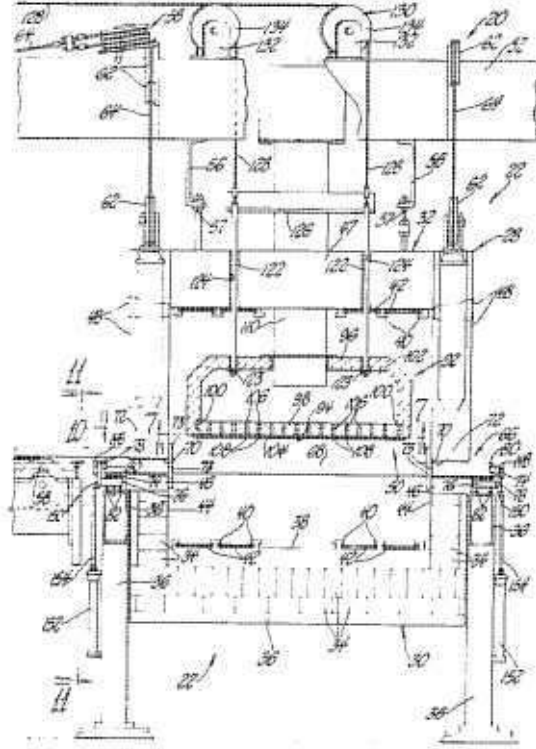


support surfaces that extend alongside the side slots. A vacuum holder of the apparatus is positioned within the furnace housing above the conveyor and has a downwardly facing surface with spaced openings in which a vacuum is drawn to receive a **glass** sheet from the conveyor and support the sheet above the conveyor. The holder surface is disclosed as being both planar and **curved** and as having a porous cover of ceramic fibers so as to distribute the vacuum and prevent marring of the **glass** as it is supported. A greater vacuum is drawn to initially support the **glass** and a lesser vacuum is subsequently drawn to prevent **glass** deformation at the spaced openings. Vertically movable auxiliary lifters positioned between the rolls or vertical movement of the vacuum holder facilitates **glass** pickup. Sensing of the **glass** position along the conveyor and operation of a locator cooperatively provide accurate positioning of the **glass** on the holder surface without requiring the conveyor to be stopped prior to the holder operation. A carrier **mold ring** moves under the supported **glass** and the vacuum is then terminated so the **glass** drops onto the **ring** and **bends** under the bias of gravity in a manner that allows **thin glass** to be accurately bent. Subsequently the **mold ring** is moved from the furnace to a quench unit between **upper** and lower blastheads that temper the bent **glass**. Increased air is then supplied to the lower blasthead relative to the **upper** blasthead to lift the **glass** sheet off the **ring**

and allow return of the **ring** to the furnace.

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- PN - [US4364765](#) A 19821221
- PR - US19810263670
19810514; US19800118822
19800205
- AP - US19810263670 19810514
- DT - *
- CT - [US4092141](#) A []; [US4202681](#) A []
- CCI - [C03B23/0357](#) ; [C03B23/0252](#) ;
[C03B23/03](#) ; [C03B27/0417](#) ;
[C03B27/048](#) ; [C03B29/08](#) ;
[C03B35/145](#) ; [C03B35/164](#) ;
[C03B35/202](#) ; [C03B35/24](#) ;
[C03B40/005](#)
- CCA - [C03B2225/02](#)
- PA - MCMASTER HAROLD; NITSCHKE
NORMAN CARL; NITSCHKE JOHN
STEPHEN
- TI - Apparatus and method for
handling heated **glass** sheets
- AB - Sheet **glass** is heated during
conveyance within a furnace
housing having a fixed roof and
vertically movable side doors
that define side slots through
which ends of conveyor rolls
project outwardly to be
supported and frictionally
driven by continuous drive loops
slidably driven over external
support surfaces that extend
alongside the side slots. A
vacuum holder of the apparatus
is positioned within the furnace
housing above the conveyor and
has a downwardly facing surface
with spaced openings in which a
vacuum is drawn to receive
a **glass** sheet from the conveyor
and support the sheet above the
conveyor. The holder surface is
disclosed as being both planar
and **curved** and as having a
porous cover of ceramic fibers



so as to distribute the vacuum and prevent marring of the **glass** as it is supported. A greater vacuum is drawn to initially support the **glass** and a lesser vacuum is subsequently drawn to prevent **glass** deformation at the spaced openings. Vertically movable auxiliary lifters positioned between the rolls or vertical movement of the vacuum holder facilitates **glass** pickup. Sensing of the **glass** position along the conveyor and operation of a locator cooperatively provide accurate positioning of the **glass** on the holder surface without requiring the conveyor to be stopped prior to the holder operation. A carrier **mold ring** moves under the supported **glass** and the vacuum is then terminated so the **glass** drops onto the **ring** and **bends** under the bias of gravity in a manner that allows **thin glass** to be accurately bent. Subsequently the **mold ring** is moved from the furnace to a quench unit between **upper** and lower blastheads that temper the bent **glass**. Increased air is then supplied to the low blasthead relative to the **upper** blasthead to lift the **glass** sheet off the **ring** and allow return of the **ring** to the furnace.

PN - [US4437871](#) A 19840320

PR - US19810263626
19810514; US19800118822
19800205

AP - US19810263626 19810514

DT - *

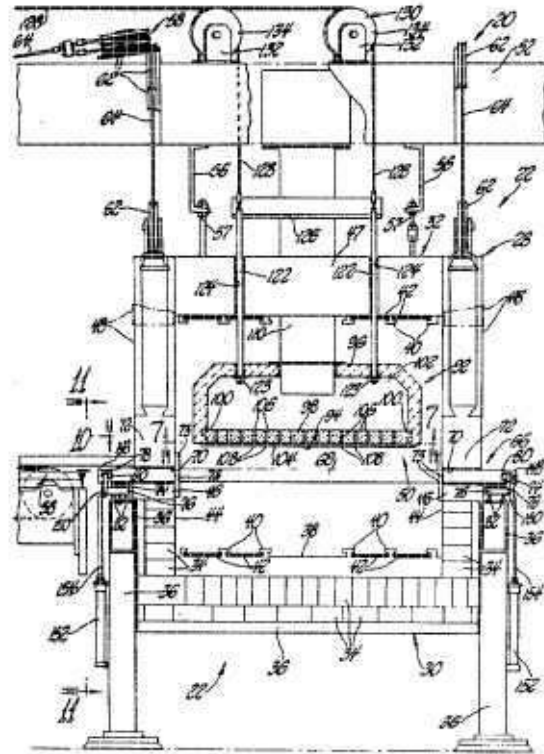
CCI - [C03B23/0357](#) ; [C03B23/0252](#) ;
[C03B23/03](#) ; [C03B27/0417](#) ;
[C03B27/048](#) ; [C03B29/08](#) ;
[C03B35/145](#) ; [C03B35/164](#) ;
[C03B35/202](#) ; [C03B35/24](#) ;
[C03B40/005](#)

CCA - [C03B2225/02](#)

PA - MCMaster HAROLD; NITSCHKE
NORMAN CARL; NITSCHKE JOHN
STEPHEN

TI - Apparatus and method
for **bending glass** sheets

AB - Sheet **glass** is heated during
conveyance within a furnace
housing having a fixed roof and
vertically movable side doors
that define side slots through
which ends of conveyor rolls
project outwardly to be
supported and frictionally
driven by continuous drive loops
slidably driven over external
support surfaces that extend
alongside the side slots. A
vacuum holder of the apparatus
is positioned within the furnace
housing above the conveyor and
has a downwardly facing surface
with spaced openings in which a
vacuum is drawn to receive
a **glass** sheet from the conveyor
and support the sheet above the
conveyor. The holder surface is
disclosed as being both planar
and **curved** and as having a
porous cover of ceramic fibers
so as to distribute the vacuum
and prevent marring of the **glass**
as it is supported. A greater
vacuum is drawn to initially
support the **glass** and a lesser



vacuum is subsequently drawn to prevent **glass** deformation at the spaced openings. Vertically movable auxiliary lifters positioned between the rolls or vertical movement of the vacuum holder facilitates **glass** pickup. Sensing of the **glass** position along the conveyor and operation of a locator cooperatively provide accurate positioning of the **glass** on the holder surface without requiring the conveyor to be stopped prior to the holder operation. A carrier **mold ring** moves under the supported **glass** and the vacuum is then terminated so the **glass** drops onto the **ring** and **bends** under the bias of gravity in a manner that allows **thin glass** to be accurately bent. Subsequently the **mold ring** is moved from the furnace to a quench unit between **upper** and lower blastheads that temper the bent **glass**. Increased air is then supplied to the lower blasthead relative to the **upper** blasthead to lift the **glass** sheet off the **ring** and allow return of the **ring** to the furnace.

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PN - [US4361432](#) A 19821130
PR - US19810263436 19810514; US19800118822 19800205
AP - US19810263436 19810514
DT - *
CT - [US4043782](#) A []; [US4116676](#) A [];
[US4204854](#) A []
CCI - [C03B23/0357](#) ; [C03B23/0252](#) ; [C03B23/03](#) ; [C03B27/0417](#) ; [C03B27/048](#) ; [C03B29/08](#) ;
[C03B35/145](#) ; [C03B35/164](#) ; [C03B35/202](#) ; [C03B35/24](#) ; [C03B40/005](#)
CCA - [C03B2225/02](#)
PA - MCMASTER HAROLD; NITSCHKE NORMAN CARL; NITSCHKE JOHN STEPHEN
TI - Apparatus and method for removing a **glass** sheet from a carrier
AB - Sheet **glass** is heated during conveyance within a furnace housing having a fixed roof and vertically movable side doors that define side slots through which ends of

conveyor rolls project outwardly to be supported and frictionally driven by continuous drive loops slidably driven over external support surfaces that extend alongside the side slots. A vacuum holder of the apparatus is positioned within the furnace housing above the conveyor and has a downwardly facing surface with spaced openings in which a vacuum is drawn to receive a **glass** sheet from the conveyor and support the sheet above the conveyor. The holder surface is disclosed as being both planar and **curved** and as having a porous cover of ceramic fibers so as to distribute the vacuum and prevent marring of the **glass** as it is supported. A greater vacuum is drawn to initially support the **glass** and a lesser vacuum is subsequently drawn to prevent **glass** deformation at the spaced openings. Vertically movable auxiliary lifters positioned between the rolls or vertical movement of the vacuum holder facilitates **glass** pickup. Sensing of the **glass** position along the conveyor and operation of a locator cooperatively provide accurate positioning of the **glass** on the holder surface without requiring the conveyor to be stopped prior to the holder operation. A carrier **mold ring** moves under the supported **glass** and the vacuum is then terminated so the **glass** drops onto the **ring** and **bends** under the bias of gravity in a manner that allows **thin glass** to be accurately bent. Subsequently the **mold ring** is moved from the furnace to a quench unit between **upper** and lower blastheads that temper the bent **glass**. Increased air is then supplied to the lower blasthead relative to the **upper** blasthead to lift the **glass** sheet off the **ring** and allow return of the **ring** to the furnace.

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PN - [JPH01145339](#) A 19890607

PR - JP19870305037 19871201

AP - JP19870305037 19871201

DT - I

CT - [JPS6172633](#) A []

CCI - [C03B11/086](#) ; [C03B11/08](#)

CCA - [C03B2215/22](#)

FI - C03B11/00&A

PA - MATSUSHITA ELECTRIC IND CO LTD

TI - FORMING OF OPTICAL **GLASS** ELEMENT

AB - PURPOSE: To avoid the damage of excess **glass** and to improve the yield of product, by pressing a **glass** raw material with a forming **mold** composed of an optical forming face and a peripheral part formed to the outside of the forming face, thereby forming an excessive part having smaller area than the peripheral part. CONSTITUTION: Each of the **upper mold** 1 and the lower **mold** 2 is provided with a concave optical forming face 6 having a prescribed **curvature** and a **ring**-shaped peripheral part 7 at the outside of the forming face. The forming face 6 and the peripheral part 7 are mirror-polished and coated with a **thin** film of cubic boron nitride. A softened optical **glass** gob 3 is pressed with the molds 1, 2 to obtain a molded article composed of an optical forming face 4 and an excessive part 5 having smaller area than the peripheral part 7. The objective optical **glass** element can be produced by removing a part or total of the excessive part 5 from the product. The process is effective in preventing the damage of the product caused by the escape of the excessive **glass** from the peripheral part of the molds 1, 2, passing of the **glass** around the edge to the side wall of the molds 1, 2 and adhesion to

the molds 1, 2.

[SS 10]