



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
28.03.2012 Bulletin 2012/13

(51) Int Cl.:
E06B 3/673 (2006.01)

(43) Date of publication A2:
09.05.2007 Bulletin 2007/19

(21) Application number: **06020779.2**

(22) Date of filing: **03.10.2006**

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

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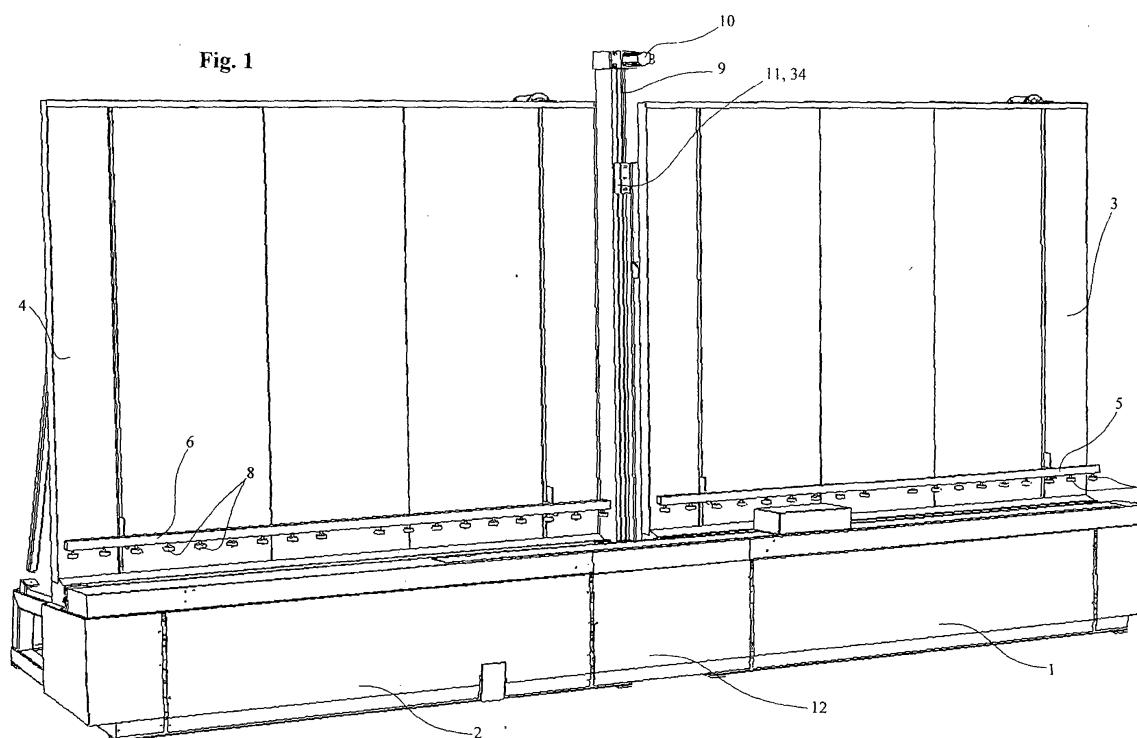
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(30) Priority: **05.10.2005 IT PD20050284**

(54) **Improved machine for the sealing of insulating glass sheets**

(57) This is an improved machine for the sealing of insulating glass panes including two alignment benches with a space between them with the head unit positioned in said spacing with a sealant delivery nozzle and a feeler pin, with both benches fitted with block-carrying chains for moving the insulating glass panes whose perimeter

cavity needs sealing. The improvement concerns in particular the arrangement of the two benches, the movement of the blocks and the addition to the head unit of a device for smoothing out the excess sealant protruding from the cavity, left by the nozzle when the head unit changes direction at the corners of the insulating glass pane.





EUROPEAN SEARCH REPORT

Application Number
EP 06 02 0779

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 6 250 358 B1 (LAFOND LUC [CA]) 26 June 2001 (2001-06-26) * column 6, line 54 - page 8, line 10; claim 10; figure 1 *	1	INV. E06B3/673
X	US 4 708 762 A (LENHARDT KARL [DE]) 24 November 1987 (1987-11-24) * column 11, lines 6-47; figure 3 *	1	
X	DE 44 37 214 A1 (LENHARDT MASCHINENBAU [DE]) 2 May 1996 (1996-05-02) * column 3, line 30 - column 4, line 39; figure 1 *	1	
X	DE 198 46 442 A1 (LISEC PETER [AT]) 29 April 1999 (1999-04-29) * column 2, line 68 - column 3, line 21; figure 1 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 17 October 2011	Examiner Kofoed, Peter
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)



Application Number

EP 06 02 0779

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

see additional sheet(s)

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 06 02 0779

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4

Improved machine for sealing insulating glass panes including two aligned benches with a spacing between them each fitted with backs fitted with bars having revolving rollers with a head assembly positioned in the spacing which has a delivery nozzle and a feeler pin, where the benches are fitted with block-carrying chains for moving the insulating glass panes for the sealing of the perimeter cavity, characterised by the fact that the chains carrying the blocks are by nature vertical and the two chains are by nature parallel to each other.

2. claims: 5, 6

Improved machine for the sealing of insulating glass panes including two alignment benches with spacing each fitted with backs with bars fitted with rotating rollers with the head unit positioned in the spacing with a delivery nozzle and feeler pin and with each bench equipped with block-carrying chains for moving the insulating glass panels whose perimeter cavity needs sealing, characterised by the fact that the head unit located in the spacing between the two alignment benches can be moved in the vertical (upwards and downwards) in addition to being fitted with a feeler pin, which rests on the back of the spacer frame and which establishes the regulation of the sealant flow and stops the movement either of the insulating glass or of the head unit and changes the orientation of the sealant delivery nozzle at the corners of the sides of the glass pane, said head unit also being fitted with the shaving device for the excess sealant protruding from the cavity, left by the nozzle in the stage when it changes direction, which works along a short stretch of the perimeter of the insulating glass that precedes a corner and which operates continuously by changing direction along a short stretch of glass that comes after the corner.

3. claim: 7

Improved machine for the sealing of insulating glass panes characterised by the fact that the shaving device works in a coordinated manner with the operations in the head unit using some of the same sensors that are already present on the unit.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 02 0779

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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17-10-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6250358	B1	26-06-2001	NONE

US 4708762	A	24-11-1987	CA 1263223 A1 28-11-1989
			DE 3539877 A1 02-04-1987
			EP 0213513 A2 11-03-1987
			US 4708762 A 24-11-1987

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