

(51) International Patent Classification:
E04B 2/96 (2006.01)

(21) International Application Number:
PCT/BE2017/000027

(22) International Filing Date:
02 May 2017 (02.05.2017)

(25) Filing Language: Dutch

(26) Publication Language: English

(30) Priority Data:
2016/5378 24 May 2016 (24.05.2016) BE

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KH, KN, KP, KR,

KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
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SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))

Published:

— with international search report (Art. 21(3))
— with amended claims (Art. 19(1))

Date of publication of the amended claims:

15 February 2018 (15.02.2018)

(54) Title: CURTAIN WALL AND SET AND CONSTRUCTION METHOD FOR SUCH A CURTAIN WALL

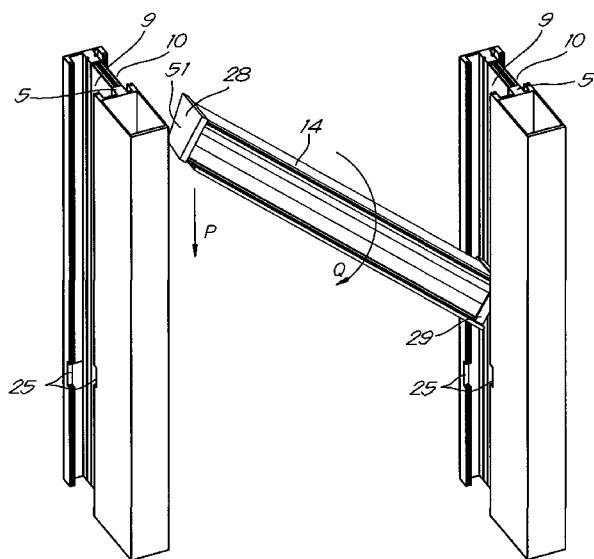


Fig. 11

(57) Abstract: The curtain wall (1) comprising mullion profiles (5), transom profiles (14) and one or more panels (4), wherein the mullion profiles (5) extend vertically, wherein the transom profiles (14) each are attached to two mullion profiles (5) and extend horizontally, wherein the mullion profiles (5) are provided with a groove (9, 10) on each side for receiving the side edge (33) of a panel (4), wherein the grooves (9, 10) have an access opening (12) wherein the access opening has a first fixed dimension or width (A1) in a horizontal direction, - wherein the transom profiles (14) have a second dimension (A3) in a horizontal direction and at right angles to the profile direction of the transom profiles (14), wherein the second dimension (A3) is larger than the first dimension (A1), wherein the transom profiles (14) have a third dimension (A4) in a non- horizontal direction at right angles to the profile direction, wherein the third dimension (A4) is smaller than the first dimension (A1),

AMENDED CLAIMS

received by the International Bureau on 22 December 2017 (22.12.2017)

1.- The curtain wall (1) comprising mullion profiles (5),
5 transom profiles (14) and one or more panels (4), wherein
the mullion profiles (5) extend vertically, wherein the
transom profiles (14) each are attached to two mullion
profiles (5) and extend horizontally, wherein the mullion
profiles (5) are provided with a groove (9, 10) on each
10 side for receiving the side edge (33) of a panel (4),
wherein the grooves (9,10) have an access opening (12),
wherein the access opening has a first fixed dimension or
width (A1) in a horizontal direction, wherein the transom
profiles (14) have a second dimension (A3) in a horizontal
15 direction and at right angles to the profile direction of
the transom profiles (14), wherein the second dimension
(A3) is larger than the first dimension (A1), wherein the
transom profiles (14) have a third dimension (A4) in a non-
horizontal direction at right angles to the profile
20 direction, wherein the third dimension (A4) is smaller than
the first dimension (A1), characterized in that the transom
profiles (14) are provided with an undercut groove (30)
extending in the profile direction and a rod (32) inserted
in the undercut groove (30), wherein the mullion profiles
25 (14) are provided with a second groove (13) for receiving
an end of said rod (32) projecting beyond the undercut
groove (30), thereby blocking a rotational movement of the
transom profiles (14).

30 2.- Curtain wall according to claim 1, characterized in
that one or more walls (26) of the grooves (9,10) are

provided with a recess (25) in which a section (16, 17) of the transom profiles (14) is located, wherein the transom profiles (14) are vertically supported by a bottom edge (27) of said recess (25).

5

3.- Curtain wall according to one of the preceding claims, characterized in that the transom profiles (14) are Z-profiles, with a first vertical leg (16) directing upward and located on the inside of the transom profile (14), a
10 second vertical leg (17) directing downwards and located on the outside of the transom profile (14) and a horizontal intermediate section (18) between the first leg (16) and the second leg (17).

15 4.- Curtain wall according to claim 3, characterized in that the undercut groove (30) with the rod (32) is provided on the inside of the second leg (17).

5.- Curtain wall according to one of claims 2 to 4,
20 characterized in that two opposite walls (26) of the grooves (9,10) are provided with a said recess (25) wherein the first leg (16) is located in a first of said recesses (25) and the second leg (17) is located in a second of the recesses (25).

25

6.- Curtain wall according to one of the preceding claims, characterized in that pre-assembled sealing pieces (28,29) are slid close-fittingly on the ends of the transom profiles (14), each sealing piece set sealingly in an
30 aforementioned undercut groove (9,10) of two opposing mullions and thus forming a seal between the ends of the

transom profiles (14) and the corresponding mullion profiles (5).

7.- Curtain wall according to claim 6, characterized in that the sealing pieces (28, 29) are provided with an elastically deformable hollow chamber (50) to facilitate the placement of the sealing pieces (28, 29).

8.- Curtain wall according to claims 6 or 7, characterized in that the sealing pieces (28, 29) are slid onto and/or into the transom profiles (14).

9.- Curtain wall according to one of claims 5 to 8, characterized in that at least one of the sealing pieces of each transom profile (14) is slidable on the respective end of the transom profile (14) in the profile direction of the transom profile (14) in order to accommodate small movements.

10.- Curtain wall according to one of claims 5 to 9, characterized in that the sealing pieces (28, 29) comprise a flat end wall (51) perpendicular to the profile direction of the transom profiles (14), wherein the end wall (51) is completely closed in the profile direction of the transom profiles (14) and rests against the bottom (9',10') of a groove (9,10) of a mullion profile (5).

11.- Curtain wall according to one of the preceding claims, characterized in that the mullion profiles (5) and the transom profiles (5) are composite profiles, each of which is composed of two or more sub-profiles (6,7,8,19,20,22),

wherein the sub-profiles (6,7,8,19,20,22) are not necessarily made of the same material.

12.- Curtain wall according to one of the preceding claims,
5 characterized in that said grooves (9,10) have a different depth (D1, D2) on the different sides of the mullion profiles (5).

13.- Set for building a curtain wall (1), the set
10 comprising two or more mullion profiles (5) and two or more transom profiles (14), wherein the mullion profiles (5) have an outer side, an inner side and two sides, wherein the mullion profiles (5) are provided on each side with a groove (9,10) for receiving the side edge (33) of a panel
15 (4), wherein the grooves (9,10) have an access opening (12), wherein the access opening (12) has a horizontal first dimension (A1), wherein the transom profiles (14) have a horizontal second dimension (A3) perpendicular to the profile direction of the transom profiles (14), wherein
20 the second dimension (A3) is larger than the first dimension (A1), wherein the transom profiles (14) have a third maximum dimension (A4) in a non-horizontal direction at right angles to the profile direction, wherein the third dimension (A4) is smaller than the first dimension (A1),
25 wherein the transom profiles (14) are provided with an undercut groove (30) with a rod (32) inserted in the undercut groove (30) and wherein the mullion sections (5) are provided with a second groove (13) for receiving an end of the above-mentioned rod (32) projecting out from the
30 groove (30), thereby blocking a rotational movement of the transom profiles (14).

14.- Set according to claim 13, characterized in that one or more walls (26) are provided with a recess (25) for receiving a part (16,17) of the transom profiles (14),
5 wherein the transom profiles (14), when mounted, are vertically supported by a bottom edge (27) of said recess (25).

15.- Set according to claim 13 or 14, characterized in that
10 the transom profiles (14) are Z-profiles, with a first vertical leg (16) directing upwards when mounted and located on the inside of the transom profile (14), a second vertical leg (17) which directs downwardly when mounted and is located on the outside of the transom profile (14), and
15 an intermediate section (18) that, when installed, is mounted horizontally between the first leg (16) and the second leg (17).

16.- Set according to one of claims 13 to 15, characterized
20 in that the set also comprises a tool (52) having a head (53) and a lever (54) attached to the head (53), wherein the shape of the head (53) is complementary to the shape of the transom profile (14) so that the head (53) can be fitted to the transom profile (14).

25

17.- A method of constructing a curtain wall (1) according to any of the claims 1 to 12, in which mullion profiles (5) are placed vertically, in which a transom profile (14) is subsequently placed horizontally between two adjacent
30 mullion profiles (5), characterized in that this transom profile (14) is placed by sequencing the following steps:

Step A) the transom profile (14) is held in the vertical plane defined by the mullion profiles (5) in a non-horizontal orientation and rotated relative to the desired end orientation of the transom profile (14) on an axis
5 parallel to the profile direction of the transom profile (14);

Step B) the transom profile (14) is brought to a horizontal orientation in the vertical plane defined by the mullion profiles (5);

10 Step C) the transom profile (14) is rotated to the desired end orientation on said axis while the transom profile (14) remains in a horizontal orientation;

Step D) blocking the rotation of the transom profile (14) around said axis by shifting a rod (32) in the undercut
15 groove (30) of the transom profile (14) into a second groove (13) of a mullion profile (5).

18.- A method according to claim 17, characterized in that a tool (52) is used in step C with a head (53) and a lever
20 (54) attached to the head (53), wherein the shape of the head (53) is complementary to the shape of the transom profile (14), wherein the head (53) is fitted to the transom profile (14) in step C and in which a rotational force is applied to the transom profile (14) via the lever
25 (54).

19.- A method according to claim 17 or 18, characterized in that it is a method of constructing a curtain wall (1) according to any one of claims 1 to 8.

30

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PCTNOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

SCHACHT, Benny
Mohawk International Services BVBA
Ooigemstraat 3
8710 Wielsbeke
BELGIQUE

Date of mailing (day/month/year) 16 November 2018 (16.11.2018)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference P1399PC01	
International application No. PCT/BE2017/000027	International filing date (day/month/year) 02 May 2017 (02.05.2017)

1. The following indications appeared on record concerning:		
☒ the applicant	☐ the inventor	☐ the agent
☐ the common representative		
Name and Address CLAEYS, Laurens Leonard J. Theo De Belderlaan 2 2240 Zandhoven Belgium	State of Nationality BE	State of Residence BE
	Telephone No.	
	Facsimile No.	
	E-mail address	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:		
☐ the person	☐ the name	☒ the address
☐ the nationality		
☐ the residence		
Name and Address CLAEYS, Laurens Leonard J. Theo De Belderlaan 4 2240 Zandhoven Belgium	State of Nationality BE	State of Residence BE
	Telephone No.	
	Facsimile No.	
	E-mail address ☐ Notifications by e-mail authorized	
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4. A copy of this notification has been sent to:		
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The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Blanc Veronique e-mail pct.team5@wipo.int Telephone No. +41 22 338 74 05
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4. A copy of this notification has been sent to:		
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	E-mail address ☐ Notifications by e-mail authorized	
3. Further observations, if necessary: The person identified in Box 2 has been added as inventor only.		
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