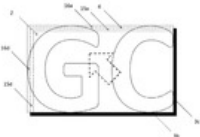
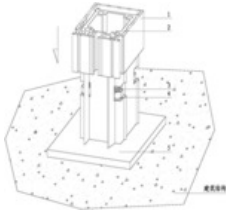
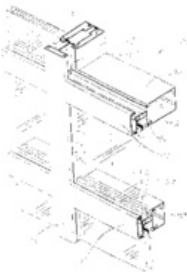
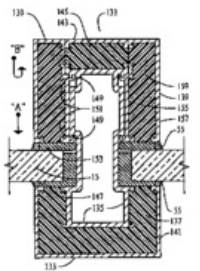
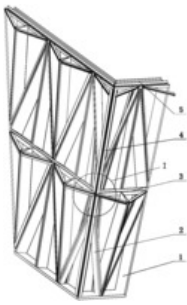
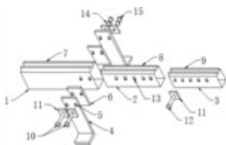
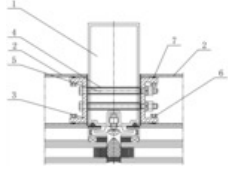
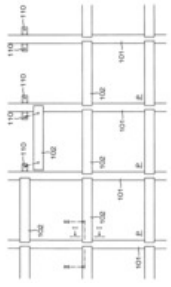
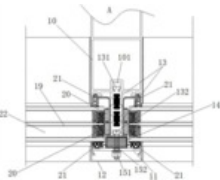
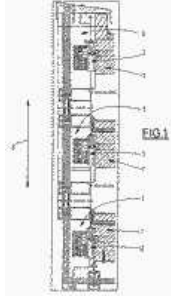
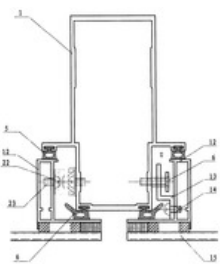
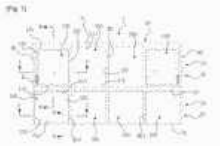
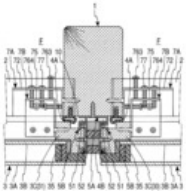
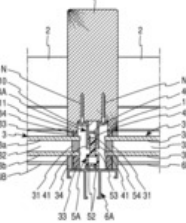
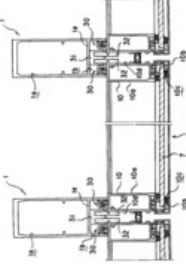
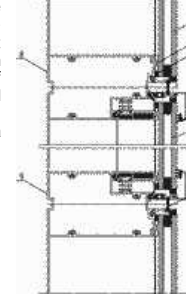
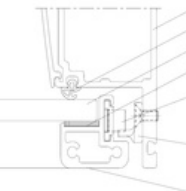
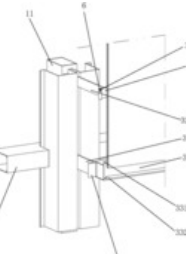
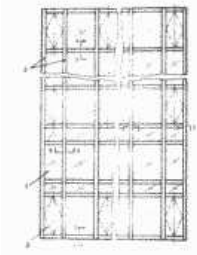
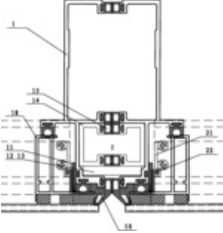
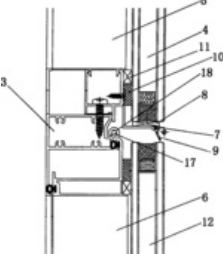
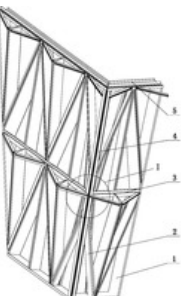
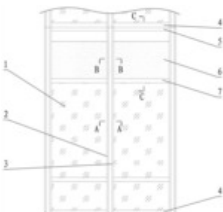
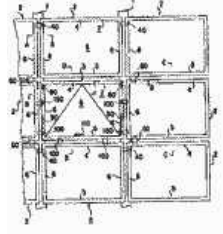


69 results for (wall and curtain and mullion and lock)/TI/AB/CLMS - Collection: FAMPAT

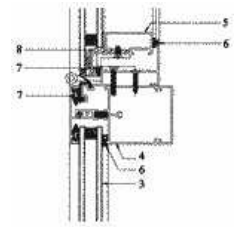
#	  Title	Publication number	Publ. date	Applicant/Assignee	
1.	Fully zero-mullion video wall system providing full pixel coverage when joined	EP3246901	2017-11-22	DINGWI CAEN HAJIMIN	
The present invention relates to construction of a video wall system. The system is formed by splicing single body of display screens together, and the spliced video wall performs "fully seamless" display, namely, "complete pixel coverage" is realized in any display area of the video wall, and the video wall becomes a display system having no "joints/seams on the screen surface" and no "joints/seams between screens"; and the display screen constructed with the video wall system of the present invention is a "spliced seamless screen": namely, a display screen which is "seamed before splicing" and "fully seamless after splicing".					
2.	Novel glass curtain wall lock pin structure	CN206053073	2017-03-29	LIAONING TAIFENG ALUMINIUM ENGINEERING	
The utility model discloses a novel glass curtain wall lock pin structure, including vertical frame of the curtain wall, curtain lock pin, stainless steel double -screw bolt, stainless steel nut and steel bottom plate, vertical frame of the curtain wall is square tubular construction, and outside middle part is provided with the notch, the curtain lock pin is square tubular construction, and the bight is provided with 4 round holes, the notch has been seted up in curtain lock pin middle part four corners, the vertical frame of the curtain wall cover is established on the curtain lock pin, steel bottom plate is last to be provided with 4 round holes, and 4 round holes in round hole position and curtain lock pin bight correspond, the stainless steel double -screw bolt is long foot screw thread, through the nut with curtain lock pin and steel bottom plate fasten together, the nut holding is in the notch. Curtain overall structure is simpler, and the security performance is good. The utility model discloses simple structure, simple to operate, exploitativeness is strong, the marketing of being convenient for.					
3.	Tube-lock curtain wall system	US20030226324	2003-12-11	X CLAD	
A curtain wall including a plurality of mullions each having a pair of glazing pockets, an I-section for supporting an interior trim member and protrusions for supporting an exterior trim member. The curtain wall further includes a plurality of rails including a notched section for insertion into the mullion glazing pockets, and a plurality of protrusions for supporting interior and exterior trim members. A bead having a plurality of protrusions is connected to the mullion in a lengthwise direction thereof, and supports the interior trim member. A plurality of retainers are insertable into notches in the mullions, the beads or the rails for removably retaining glazing infill components (i.e. panels, windows, doors) in the curtain wall. The curtain wall design of the present invention allows for the glazing infill components to be installed and/or removed from either the front side or the back side of the curtain wall.					
4.	Seismic safe and fire resistant rated edge attached stopless glazing	EP1851392	2007-11-07	MEDIA CURTAINWALL AZIZ F FARAG Aziz. F .. Farrah F. Aziz Farrell	
Forming a fenestration unit which may have seismic safe properties and/or fire resistance rated properties for use in buildings and other structures includes edge attaching a panel of any applicable material, in a continuous fashion, to a supporting mullion. The supporting mullion is attached to the panel by means of a bridging element that withstands tension stresses. Single or multiple insert parts may be attached to the bridging element and may be integrally embedded between multiple sheets composing the panel, or attached respectively in single or multiple grooves at the edge of the panel. The panel may be composed of multiple laminated sheets. A laminating interlayer between the sheets will hold the sheets together as one sheet. The interlayer can be a liquid that may cure to a rigid material. Alternatively, the interlayer may be provided between the multiple sheets and the assembly may be heated and pressed multiple times.					
5.	Locking piece connecting structure of corner of curtain wall unit	CN103469940	2013-12-25	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	
The invention belongs to the field of curtain walls, and particularly relates to an improved locking piece connecting structure of a corner of a super-large curtain wall unit. The locking piece connecting structure of the corner of a curtain wall unit is simple in structure, small in amount of needed steel and capable of lowering the cost. The connecting structure comprises a curtain wall corner framework with corner vertical frames, wherein the upper and lower ends of the curtain wall corner framework are transverse frames. The connecting structure is characterized in that a middle transverse frame is arranged in the curtain wall corner framework, and the end part of the middle transverse frame is connected with the corner vertical frames; the upper and lower sides of the middle transverse frame in the curtain wall corner framework are respectively provided with a slant frame; one end of each slant frame is connected with the transverse frames, and the other end of each slant frame is fixedly connected with a joint between the middle transverse frame and each corner vertical frame; clamping grooves are formed at the positions, corresponding to the position of the middle transverse frame, of the opposite sides of two adjacent corner vertical frames of the curtain wall corner framework; the two corner vertical frames are connected into a whole body through locking pieces in the clamping grooves.					
6.	Lock pin structure is connected to marble curtain	CN206873703	2018-01-12	SHANGHAI SUNZMO STONE DEVELOPMENT	
The utility model belongs to the technical field of building curtain technique and specifically relates to a lock pin structure is connected to marble curtain, including the munnion, first lock pin and second lock pin, munnion one end from left to right is equipped with first lock pin and second lock pin in proper order, munnion both sides and the one end that is located near first lock pin all are equipped with the adaptor, the adaptor outside is equipped with first bolt, first bolt top all is equipped with the backing plate, all be equipped with the nylon cushion piece between adaptor and the munnion, the munnion, first lock pin and second lock pin upper end are equipped with the munnion tongue respectively, first tongue and second tongue, through being equipped with second lock pin cover in first lock pin, be convenient for adjust the length of lock pin, all be equipped with the adaptor in munnion both sides for connect with outside fossil fragments, all be equipped with the fixed orifices on first lock pin and the second lock pin, being convenient for to pass the fixed orifices through the second bolt, will to have adjusted the lock pin of length fixed, the department is equipped with nylon cushion piece, backing plate and flat shim at the bolt fastening for avoid material wear to be out of shape in the time of reinforcing connection stability.					

7.	Horizontal frame of curtain and munnion lock pin formula connection structure	CN207829253	2018-09-07	WU HONGTAO	The utility model relates to a horizontal frame of curtain and munnion lock pin formula connection structure, including the munnion, munnion and building wall fastening connection, the both sides of munnion are provided with the lock pin respectively, are provided with the thru hole in the munnion, wear to be equipped with the sleeve pipe in the thru hole, and two lock pins of munnion both sides at the intraductal connecting bolt fastening connection of cover, close the horizontal frame suit in chamber through wearing the dress outside the lock pin and through fastening screw and lock pin fastening connection. The utility model has the advantages of simple structure and reasonable design, convenient to use, simple installation, can be effectual the problem of being connected of horizontal frame and munnion of solution curtain, the deformations problems of munnion in the installation can also effectually be avoided to the while to effectual improvement curtain installation effectiveness shortens construction cycle, reduces construction cost. 
8.	Mullion support structure for crosspiece in curtain wall	JP2002332710	2002-11-22	SHIN NIKKEI	PROBLEM TO BE SOLVED: To provide a mullion support structure of a crosspiece in a curtain wall capable of simplifying crosspiece installation work. SOLUTION: This structure for installing the crosspiece 2 disposed over mutually adjacent mullions 1 for supporting a panel P by an upper side surface or a lower side surface of it comprises a hook part 5 provided on a bracket 4 connected to the mullion 1 to protrude toward the outside of the room, with a tip part directed horizontal, and a lock hole part 2B provided in a room side wall 2A of the crosspiece 2 for the hook part 5 to be inserted. As the hook part 5 is inserted into the lock hole part 2B, the crosspiece 2 is moved in the opposite direction to the direction of the tip part of the hook part 5, thereby the hook part 5 and the lock hole part 2B are locked to each other. 
9.	Bridge cut-off aluminum -alloy curtain wall beam column structure and aluminum -alloy curtain wall	CN207538272	2018-06-26	BEIJING TENGMEIQI SCIENCE & TECHNOLOGY DEVELOPMENT	The utility model belongs to the technical field of building curtain technique and specifically relates to a bridge cut-off aluminum -alloy curtain wall beam column structure and aluminum -alloy curtain wall is related to, beam column structure includes indoor side aluminium alloy and outdoor side mounting, be provided with thermal -insulated material in the confined space between indoor side aluminium alloy and the outdoor side mounting. Outdoor side mounting includes interior clamp plate of aluminium alloy and aluminium alloy buckle, the positive both sides of clamp plate set up the joint groove respectively in the aluminium alloy, and the internal surface both sides of aluminium alloy buckle are provided with the elastic clamping board, are connected through the elastic clamping board and the lock in joint groove and press the joining of plates in realization aluminium alloy buckle and the aluminium alloy, thermal -insulated material be the disconnected hot material of double flutemouth injecting glue, double flute mouth injecting glue absolutely the one end of hot material be provided with with the draw -in groove matched with dop of indoor side aluminium alloy, the other end is provided with the recess, the recess is connected through clamp plate in bolt and the aluminium alloy. In this scheme, thermal insulation performance that the disconnected hot material of double flute mouth injecting glue has increased curtain wall beam post structure can realize the indoor good heat preservation and the effect that gives sound insulation. 
10.	Fixing bracket for a curtain wall mounting-device system	EP0444552	1991-09-04	HARTMANN	Curtain wall mounting-device system comprising a plurality of structurally identical fixing brackets (2) which can act both as fixed and as movable bearings, which are connected to a wall (1) or a floor slab (5) and receive on their free side (14) mullion profiles (3) in a manner such that they are displaceable in at least one direction. An individual fixing bracket (2) of this type essentially consists of a wall plate (8) and two leg plates (9) which project perpendicularly in front of this and fasten the mullion profile (3) between them. The leg plates (9) are connected by their guide rails (18), which slide in the receiving grooves (24), to the wall plate (8). The position of the leg plates (9) is adjusted in the longitudinal direction (6) via the adjusting screws (27). The mullion profile (3) is secured in its position between the leg plates (9) via retaining plates (43) and is connected to the latter via a retaining screw (42). 
11.	Curtain wall system capable of discretionarily being demounted, mounted and changed	CN101059006	2007-10-24	QIU JIANPING	A baffle wall system can be disassembled, installed and replaced arbitrarily indoor or outdoor. It includes mullion components, fixed unit components, opening unit components and beam of sealed opening unit components. The mullion is equipped with hanging bar; the fixed unit components are equipped with hook and locking device; the opening unit components are equipped with sealed beam. The fixed unit components is hanged on the mullion to press the mullion sealing adhesive tape and realize confinement, the horizontal frames of the fixed unit components are inserted and connected with each other to press the sealing adhesive tape and realize confinement; the beam on the opening unit components, the mullion and the horizontal frames on the fixed unit components combine the opening window frame. The opening unit components are linked with the mullion through butt hinge, the sash lock locks and presses the sealing adhesive tape tightly and realizes sealing, opening can realize window-opening and ventilation. The whole baffle wall system realizes the sealing and water discharging function of whole baffle wall through the interaction between the mullion and unit components. The advantages of the invention are: achieving the disassembling, installation and replacement arbitrarily indoor or outdoor; materials consumption is less, the outside need not be sealed by anti-weather sealant and the costs are reduced. 
12.	Sliding window system for multistoried building	WO2009/082138	2009-07-02	LG CHEM LG HAUSYS	The present invention discloses a sliding window system for a multistoried building, which has structural strength to endure external wind pressure and also allows natural ventilation of the indoor space. The sliding window system for a multistoried building comprises a curtain wall including a plurality of transoms and mullions and having a plurality of window installation spaces formed by the transoms and the mullions; a plurality of fixed windows disposed in some of the window installation spaces of the curtain wall, each fixed window comprising at least one fixed window frame mounted fixedly to two transoms and two mullions; and at least one sliding window disposed in the window installation space and mounted to two mullions and two transoms to be opened and closed. Here, each sliding window comprises a sliding window frame slidably mounted to rails mounted to the corresponding transoms and a fixed window frame fixed to the transoms and the mullions. In addition, each of the fixed window frame of the sliding window and the fixed window frame of the fixed window comprises upper and lower horizontal frames respectively fixed to the transoms and two vertical frames disposed at both ends of the horizontal frames and fixed to the mullions. 

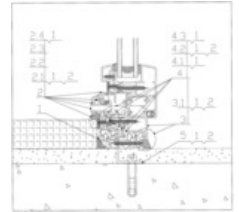
13.	Curtain wall of building	JP2012117260	2012-06-21	WATAHAN KOKI	PROBLEM TO BE SOLVED: To prevent damage of a curtain wall due to vibrations or the like of a building. SOLUTION: In a curtain wall of a building for which an opening F surrounded by a mullion 1 and a transom 2 is closed by a panel member 3 from the outdoor side, left and right side edges 30, 31 of the panel member 3 are respectively locked in one horizontal direction to the mullion 1 facing them by horizontal direction locking members 51, 52, the horizontal locking direction of the plurality of adjacent panel members 3, 3 is the same direction, the upper edge and lower edge of the panel member 3 are respectively locked along the lower part of the vertical direction to the transom 2 facing them by a vertical direction locking member, and the panel member 3 is assembled to the mullion 1 and the transom 2. Then, a gap of the plurality of adjacent panel members 3, 3 is bonded and sealed with a sealing agent 4B. Further, four corners of the panel member 3 are respectively connected to four corners of the opening F surrounded by the mullion 1 and the transom 2 by using positioning members 7A, 7B. COPYRIGHT: (C)2012,JPO&INPIT	
14.	Curtain wall of building	JP2008190270	2008-08-21	COTTON TANSUI	PROBLEM TO BE SOLVED: To provide a curtain wall of a building having a structure allowing application of an intermediate member and a mounting device which are curtain wall constituent members to composite glass and other panel members of different plate thicknesses, and having satisfactory productivity. SOLUTION: This curtain wall is constituted by fixing the mounting devices 4A, 4B on an outdoor side end face 10 of a mullion 1 extended in the vertical direction and an outdoor side end face 20 of a transom 2 extended in the horizontal direction along the longitudinal direction, providing the intermediate members 5A, 5B on these mounting devices 4A, 4B to enable adjustment of amount of protrusion of the intermediate members 5A, 5B onto an outdoor side, adjusting the amount of protrusion of them onto the outdoor side in accordance of thickness of the composite glass 3 being the panel member fitted into a latticed frame formed by the mullion 1 and the transom 2, and nipping the outer periphery of the composite glass 3 among cover members 6A, 6B attached to outdoor side terminals of the intermediate members 5A, 5B, the mullion 1, and the transom 2. COPYRIGHT: (C)2008,JPO&INPIT	
15.	Curtain wall	JP2009203662	2009-09-10	YKK - YOSHIDA KOGYO KABUSHIKIGAISHA	PROBLEM TO BE SOLVED: To provide a curtain wall which prevents a lower portion of an upper mullion and an upper portion of a lower mullion from being deformed in an approximately dogleg shape by a wind load, when the upper and lower mullions adjoin each other in upper and lower positions. SOLUTION: A unit 5, which is constituted by mounting a face material 7 in a frame body 6, is mounted between the right and left mullions 1; right and left vertical members 10 of the frame body 6 are locked to a portion to the lower portion of the upper mullion 1 and a portion to the upper portion of the lower mullion 1 by means of locking means 30, respectively, so that the mullions 1 and the vertical members 10 cannot be separated from one another. COPYRIGHT: (C)2009,JPO&INPIT	
16.	Hidden type hung window glass curtain wall	CN202520169	2012-11-07	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	The utility model relates to a hidden type hung window glass curtain wall. According to the hidden type hung window glass curtain wall, a groove with a step is arranged at one end of a rectangular frame body, wherein the rectangular frame body comprises a right upright frame, a left upright frame, an upper transverse frame and a lower transverse frame; a rectangular flat frame is arranged in the groove; one end of the flat frame is in contact with the internal end faces of the grooves of the right upright frame, the left upright frame, the upper transverse frame and the lower transverse frame through sealing joint strips, and the other end of the flat frame is fixedly connected with hollow glass; an outwards overturned L shaped folding side is arranged at the external end face of the flat frame, the internal end face of the folding side is in contact with the external surfaces of the right upright frame, the left upright frame, the upper transverse frame and the lower transverse frame by sealing joint strips; a semicircular hook is arranged at the upper end of the flat frame and matched with a circular convex platform on the surface of the upper transverse frame; and the semicircular hook is limited through a lock catch of the hung window. The curtain wall has simple structure, and is convenient to mount; and moreover, the frame face of the hung window is in line with transverse and vertical keels of a curtain wall, so that the internal and external visual effects are the same as those of a large-scale glass curtain wall, and better visual effect can be achieved.	
17.	Hidden frame curtain wall opening casement	CN202913885	2013-05-01	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	The utility model belongs to the technical field of curtain walls, and relates to a hidden frame curtain wall opening casement, in particular to an improvement of a curtain wall opening casement structure. The hidden frame curtain wall opening casement is simple in manufacturing process, and low in cost, not only is capable of achieving rapid construction of curtain wall hidden frame glass opening, but also is capable of ensuring concise and clear decorative effects of curtain wall opening. The hidden frame curtain wall opening casement comprises a unit vertical frame, internally opening glass and a secondary frame, and is characterized in that the secondary frame and the internally opening glass are fixedly adhered through a 3M adhesive tape. The secondary frame on a hinge side is connected with the unit vertical frame through a hinge shaft, and the secondary frame on a hand-holding side is connected with the unit vertical frame through a locking point and a locking block.	
18.	Open aluminum curtain wall structure	CN206591700	2017-10-27	SHENZHEN FANGDA BUILDING TECHNOLOGY	The utility model relates to a curtain wall construction discloses an open aluminum curtain wall structure, include: the curtain wall main part that constitutes by stand, crossbeam, the curtain wall main part is still including being fixed in the waterproof aluminum back plate between stand, the crossbeam, open aluminum curtain wall structure still includes: locate the sealed aluminum sheet assembly of aluminum back plate front side, be fixed in the coupling assembling of stand front side, install in the outer aluminum sheet assembly of coupling assembling front side, sealed aluminum sheet assembly including respectively with curtain wall main part fixed connection's stand sealing member, crossbeam sealing member, the stand sealing member wraps up in the front end periphery of stand, the crossbeam sealing member wraps up in the front end periphery of crossbeam, sealed aluminum sheet assembly is provided with seal structure with the junction of curtain wall main part, waterproof aluminum back plate is provided with seal structure with the junction of stand, crossbeam. The utility model discloses install the good and long service life of quick, convenient, waterproof, security performance.	

19.	Curtain wall of glass for high building	CN2056169	1990-04-18	SHENYANG AEROPLANE MANUFACTURING	The utility model relates to an aluminum alloy hollow glass curtain wall for a high building, and a fixing window and a rotary window of the high building are alternatively arranged. The aluminum alloy hollow glass curtain wall is primarily composed of a vertical frame, a transverse frame, hollow glass, a sealing rubber strip, a rotary window sealing strip, a silicone sealing gum, screw nails, an unequal angle steel, a rubber spongy cushion, a plastic block, a water discharging plate, an asbestos cement plate and an embedded part steel plate. The utility model has the advantages of simple structure, sealing effect, heat reservation, no dew formation, good round insulation, good light obtaining property, corrosion resistance, easy maintenance, higher strength, higher rigidity and long service life. The aluminum alloy hollow glass curtain wall is particularly suitable for the high buildings of large hotels of regions with the larger temperature difference. 
20.	Enhancing type unitized curtain wall system	CN101748836	2010-06-23	QIU JIANPING	The invention discloses an enhancing type unitized curtain wall system, which can realize to replace any component and can be organized and installed by using a plurality of methods. The curtain wall unit of the curtain wall system consists of a framework unit and a facing unit. The framework unit of the curtain wall consists of an upright frame, an upper crossbeam, a lower crossbeam, a supporting member, a rubber strip, a slideable seal assembly at the upper end of the upright frame, and a slideable plugin at the lower end of the upright frame. The facing unit consists of a vertical frame, an upper transverse frame, a lower transverse frame, a supporting member, a seal assembly at the end of the cross frame, a rubber strip and a compressing locking piece. In the curtain wall system, the facing unit is hung on the corresponding position of the framework unit; the facing unit can be freely dismantled from the framework to replace the facing unit. A connecting board is additionally arranged between the upright frame of the curtain wall unit and a bidirectional adjusting hook on the connector of a main structure; replacement of the framework unit is realized by removing the connection bolt of the connection board and the bidirectional adjusting hook. The enhancing type unitized curtain wall system has the advantages of being capable of replacing any component, and having stronger adaptability, and being capable of adopting a plurality of methods to organize construction, and also has the advantages of convenient construction, good safety, construction period shortening, cost reducing and quality guaranteeing. 
21.	Hidden frame curtain wall window system	CN201915528	2011-08-03	SUZHOU KELIDA BUILDING DECORATION ENGINEERING	The utility model discloses a hidden frame curtain wall window system. The hidden frame curtain wall window system comprises a frame body composed of an outer frame and a muntin, and glass installed on the frame body, wherein the frame body is divided into a fixed sash frame and a movable opening sash frame by the muntin, and the glass is respectively installed on outer surfaces of the fixed sash frame and the opening sash frame. In the curtain wall window system with the hidden frame, the hidden frame body is arranged at the back of the glass and divided into the opening sash frame and the fixed sash frame, so that the effect of a hidden frame glass curtain wall is realized in terms of the exterior appearance; and the hidden frame curtain wall window system can also be produced according to the window process during the practical production process, so that the production cost is greatly saved, and the installation process is convenient. 
22.	Locking piece connecting structure of corner of curtain wall unit	CN203080752	2013-07-24	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	The utility model belongs to the field of curtain walls, and particularly relates to an improved locking piece connecting structure of a corner of a super-big curtain wall unit. The locking piece connecting structure of the corner of the super-big curtain wall unit is simple in structure, small in amount of needed steel and capable of lowering cost. The connecting structure comprises a curtain wall corner framework provided with corner vertical frames, wherein the upper end and the lower end of the curtain wall corner framework are transverse frames. The connecting structure is characterized in that a middle transverse frame is arranged in the curtain wall corner framework, and the end portion of the middle transverse frame is connected with the corner vertical frames; the upper side and the lower side of the middle transverse frame in the curtain wall corner framework are respectively provided with a slant frame, one end of each slant frame is connected with the transverse frames, and the other end of each slant frame is fixedly connected with a connection position of each transverse frame and each corner vertical frame; and clamping grooves are formed at the positions, corresponding to the position of the middle transverse frame, of the opposite sides of two adjacent corner vertical frames of the curtain wall corner framework, and the two corner vertical frames are connected into a whole through locking pieces in the clamping grooves. 
23.	Sunshade type unit curtain is decorated to integral type	CN207646961	2018-07-24	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	The utility model provides a sunshade type unit curtain is decorated to integral type, it is complicated to have solved the outside decoration sunshade frame connection structure of current unit curtain, the poor and problem with high costs of fastness, technical scheme is: its curtain wall supporting frame includes outdoor public munnion, outdoor female munnion, horizontal frame, transom and go up horizontal frame down, and unit curtain panel is provided with the indoor clamp plate and the room outer ledge that are used for crimping aluminum plate panel or glass panels including setting up the aluminum plate panel and the glass panels of below in the transom top in each framework, and the wide wedge structure in narrow back before each framework shape is has outwardly directed sunshade eaves portion supporting part after and, adjacent outdoor public munnion and the mutual lock of outdoor female munnion to through heating up strip and screw and the indoor public munnion that corresponds absolutely and being connected for indoor female munnion, adjacent last horizontal frame and the mutual lock of horizontal frame down, adopt with the sunshade frame of curtain frame integral type structure, simplify connection structure, whole steadiness is strong, non -deformable has saved material cost. 
24.	Curtain wall	JP08042034	1996-02-13	YKK - YOSHIDA KOGYO KABUSHIKIGAISHA	PURPOSE: To simplify assembling work of a curtain wall by connecting right and left vertical materials of a fixed unit to substantially a half part of a mullion in the in-plane direction which is adjacent to both right and left sides and connecting right and left vertical materials of a movable unit with a hinge and turning the unit freely in the out-of-plane direction. CONSTITUTION: A panel 8 is mounted to a frame member 7 which is framed with an upper horizontal material 4 and a lower horizontal material 5 and vertical materials 6 on both sides in square shape, thereby forming a fixed unit 2. The panel 8 is mounted to the frame member 7 framed with the upper horizontal material 4 and the lower horizontal material 5 and the vertical materials on both sides, thereby constituting a movable unit 3. Both side vertical materials 6 of the fixed unit 2 are press contacted with substantially half an outdoor area of a mullion, which is adjacent to both right and left sides in the in-plane direction by way of a vertical airtight material so that they may be connected to each other. The vertical materials 6 on both sides of the movable unit 3 are mounted freely swingalily with a hinge 80 in the out-of-plane direction substantially half for an outdoor part of the mullion 1 which is adjacent to both sides, so that they may be in press contact through the vertical airtight material. 

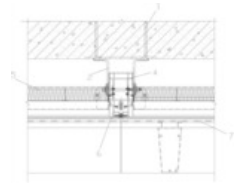
The utility model relates to a unit window suitable for a **curtain wall**. The unit window is outwards opened, comprises a frame structure composed of an unopened part and an opened part, and a piece of hollow toughened glass; the hollow toughened glass is embedded in the frame structure; Compared with the prior arts, the utility model, as good as a unit **curtain wall**, achieves the advantages of simple elegant appearance, large lighting space, good decorative effect and high mounting speed. a sealing strip has good anti-aging property and controllable quality; not only ensures the mounting precision, but also eliminates the additional stress caused by mounting deviation, and achieves high shock resistance and high inter-layer position change resistance; the aluminium material of the unit window has a smaller outer surface area, thereby achieves better thermal performance.



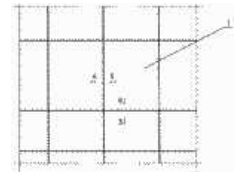
The invention provides a door and window and glass **curtain wall** using heat insulation blocks and foam for insulating heat, and belongs to the technical field of a door and window and **curtain wall**. The problems of poor effect and high cost of the heat insulation strip heat insulation technology are solved; the carrying and installation problems due to whole window batch production in factories are solved; and the glass **curtain wall** heat insulation problem is solved. The door and window and glass **curtain wall** using heat insulation blocks and foam for insulating heat has the following technical scheme and purposes that 1, PVC (Polyvinyl Chloride) heat insulation blocks are used for insulating heat between inner and outer frames of a door and window and insulating heat of stainless steel connecting nails of inner and outer frames; foam is injected; the heat insulation K value of the frame body can easily reach a value below 0.8; and the aluminum material consumption per square meter is 2KG less than that in the prior art; 2, glue grooves are formed in the outer frame of a window body; clamping and embedding openings are formed in the inner frame; the window body is also provided with door and window positioning blocks, and is matched with a gray formwork; and the mechanized installing problem of the whole window is solved; 3, the window body is provided with an independent wind-pressure-resistant structure; the door and window strength problem is solved; and the carrying problem due to whole window batch production in factories is solved; and 4, the heat insulation frame is used for embedding **curtain wall** glass; the side line heat loss of glass is reduced; then, nylon heat insulation blocks are used for insulating the heat between **curtain wall** beam posts and framed glass units and insulating heat of installing nails; then, foam is injected; and the beam and post heat insulation of the glass **curtain wall** is realized.



The utility model relates to a modular munnion **lock** pin connection structure relates to **curtain** connection structure field, including dull and stereotyped built-in fitting, adaptor, munnion, **lock** pin, heated board, vice frame and glass panels, the munnion is hollow rectangular sectional material, it is fixed with vice frame that the clamp plate is passed through to the one end of munnion, and its other end passes through the adaptor to be fixed on the dull and stereotyped built-in fitting on the **wall** body, the both sides of munnion are connected with the heated board respectively, fixed glass panel on the vice frame, the **lock** pin is installed in the cavity intracavity of vice frame, the **lock** pin includes first unit and second unit, first unit and second unit butt joint and fixed, be equipped with a plurality of archs that support to the munnion inner **wall** on the **lock** pin, every arch is 0.2mm apart from the interval of munnion inner **wall**. This modular munnion **lock** pin connection structure can effectively carry out decomposition and composition, and the **lock** pin is locked through the machine-processed screw of horizontal direction when satisfying different munnion size service function to it supports the wind load resistance requirement to make the combination **lock** pin can satisfy on the horizontal direction.



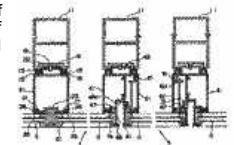
The utility model belongs to the field of **curtain** walls, and particularly relates to modification of the structure of a small-unit-type glass **curtain wall** system without glue. The small-unit-type glass **curtain wall** system without the glue is clean and tidy in appearance effect and convenient and fast to install. The small-unit-type glass **curtain wall** system without the glue comprises horizontal frames, vertical frames and glass plates, wherein two sides of each glass plate are respectively provided with a side secondary frame, an upper secondary frame is installed on each glass plate, and a lower secondary frame is installed under each glass plate. The small-unit-type glass **curtain wall** system without the glue is characterized in that the horizontal frames and the vertical frames are all provided with connection frames, a first locking plate group is installed between the connection frame of each vertical frame and the side secondary frames of each glass plate, a second locking plate group is installed between the connection frame of each horizontal frame and the lower secondary frame of each glass plate, and a clamping block is installed between the upper secondary frame of each glass plate and the connection frame of each horizontal frame.



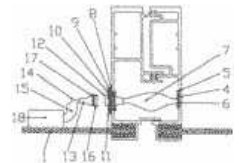
PURPOSE: To provide a gasket capable of fitting a **curtain wall** having a wide visual field of a projected window and a plate material by forming the **curtain wall** with a **mullion** fixed to a skeleton, the first and second vertical sash bars, the first and second horizontal sash bars, a window frame, and a plate material.

CONSTITUTION: Mullions 11 are fitted to a building skeleton. The projection 22 of a vertical sash bar 21 is inserted into the recess 12 of each **mullion** 11 and fixed by a screw 16. Vertical sash bars 41 are fixed at the position where a projected window 5 is provided. A horizontal sash bar is arranged between the vertical sash bars 21, 41. The second horizontal sash bar is fixed at the position where the projected window 5 is provided. The protruded stripe of a gasket 81 is inserted into the recessed groove 23 of the vertical sash bar 21, a presser plate 25 is inserted into an insertion groove, and a **lock** pawl 26 is locked on the **lock** groove of the vertical sash bar 21. The tip section of a fitting piece 48 is hooked on the **lock** groove on the vertical sash bar 41 and the second horizontal sash bar, the protruded stripe is inserted into a recessed groove 47, and a gasket 91 is fitted like the gasket 81. Parts are used in common, and the stock management and process control can be facilitated.

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Disclosed is a photoelectric **curtain wall** cable rapid connection device comprising a **curtain wall** frame. It is characterized in that a notch and a connecting hole are arranged on the frame, a holdfast for fixing a wire is arranged at the notch, a fixed socket is arranged on the connecting holes, and a movable plug that is inserted in the fixed socket is connected with the anode and cathode wire on a photoelectric glass junction box. The utility model solves the interface problem of the **curtain wall** wiring, improves the connecting speed of the cable during on-site arrangement, enhances the rationality and security of the wire distribution on the photoelectric **curtain wall**, and reduces the on-site trivial working procedure and open wire distribution on the **curtain wall** structure for making the whole appearance look nicer.



Apparatus for sealing a building material, e.g. a **curtain wall** panel 2,12, comprises a sealing member, 20, 21, and fixing means 6 which retains the seal 20, 21, against the panel 2, 12 and against a load-bearing member 4, e.g. a **mullion** or transom. A screw member (not shown) urges plate 6 toward **mullion** 4; a cover strip 29 covers the screw; a rear seal 9 may be present.

(From GB2363406 A)

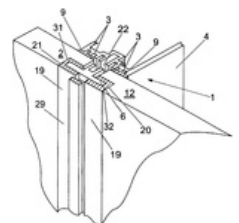
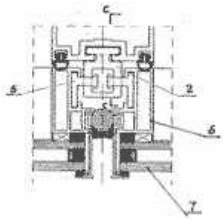
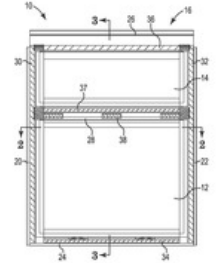
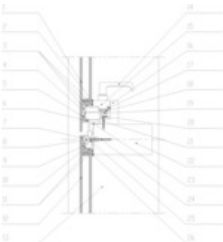
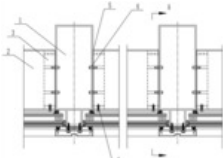
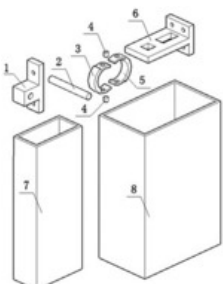
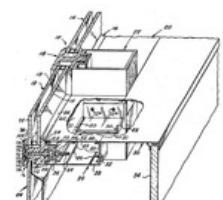
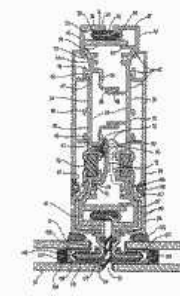
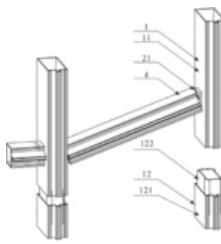
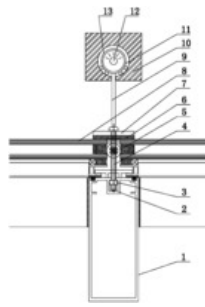
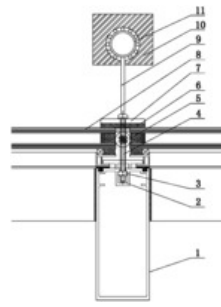
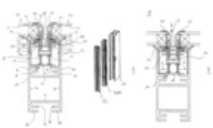
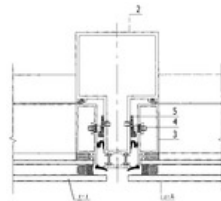
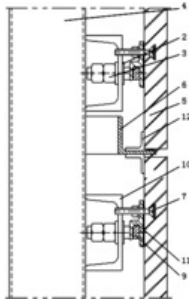
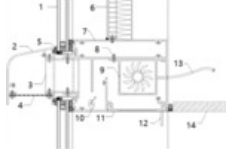
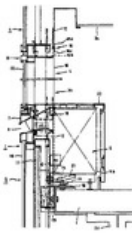
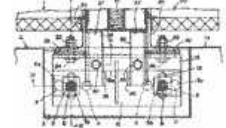
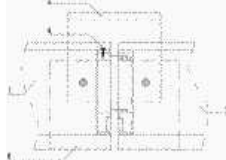
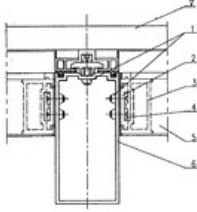
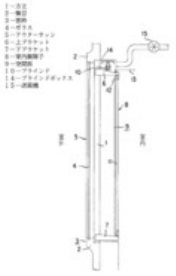
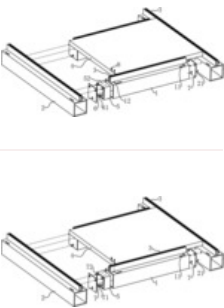
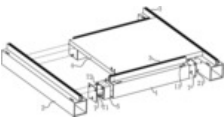
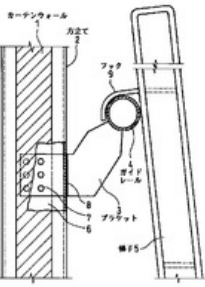
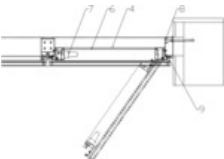
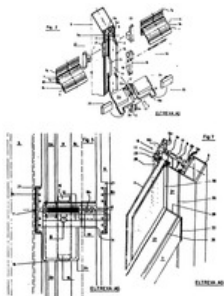


Fig. 1

32.	Non-crossframe half-unit curtain wall	CN2358143	2000-01-12	INSTITUTE OF SHENYANG YUANDA CURTAIN WALL TECHNOLOGY	The utility model relates to a half-unit curtain wall without any crossframe, which comprises vertical frames and additional frames. The is characterized in that each vertical frame is provided with a T-shaped slot, wherein, a load bearing support block and a slide rod are arranged in the slot, which are fixed by fasteners; each additional frame is fixedly provided with a support block and a lock block; a support block tower is arranged above the load bearing support block; the edges of the lock block and the slide rod are provided with hook bodies which are glidingly engaged with each other. The utility model has the advantages that the troubles of fixing by fasteners when a curtain wall of a building is installed previously can be eliminated; the convenient and rapid installation mode can be realized; moreover, the safety performance is higher. 
33.	Thermal break for curtain wall	WO2013/090415	2013-06-20	PELLA	A curtain wall panel (10) includes a frame (16) with a first frame member (20) defining a channel (60), a cover (40) configured to extend over the first frame member, a spacer (30) formed of a thermally insulating material, the spacer including a first end (110), a body (112), and a second end (114), the first end being configured to be secured in the channel of the first frame member in a cammed interference fit by rotating the body of the spacer, and the second end being configured to form a cammed interference fit with the cover. An insert (12) is supported from the first frame member by the spacer with the cover fit onto the spacer to capture and secure the insert relative to the frame. 
34.	Fan structure is opened to wooden curtain of latent frame aluminium package	CN204609664	2015-09-02	SHANGHAI KING NEW BUILDING MATERIAL	The utility model discloses a fan structure is opened to wooden curtain of latent frame aluminium package, including a pure wooden curtain munnion, the horizontal frame of pure wooden curtain, pure wooden curtain munnion with the horizontal frame of pure wooden curtain is fixed integratively, still including fixed cavity glass and division fan cavity glass, just it reaches to open fan cavity glass fixed cavity glass is fixed in on the pure wooden curtain munnion. The utility model has the advantages of simple structure, convenient to use. 
35.	Curtain is frame connection structure anyhow	CN206722167	2017-12-08	PAN FENG	The utility model relates to a curtain is frame connection structure anyhow, the lock pin setting is in closing the horizontal frame in chamber, and two lock pins distribute at the both ends of closing the horizontal frame in chamber, close and be provided with the slot hole on the horizontal frame in chamber, the lock pin with close the self-tapping screw fastening connection of the horizontal frame in chamber through passing the slot hole, close the horizontal frame both ends in chamber and be provided with the munnion respectively, the munnion with close the horizontal frame in chamber through purpose-built screw connection, the utility model discloses a position adjustable screw with the lock pin setting in closing the horizontal frame in chamber, when closing the horizontal frame in chamber and being connected with the munnion, can insert together between two adjacent munnions closing chamber horizontal frame intercommunication lock pin, then the purpose-built screw through another end pin axle of threaded one end with the munnion with close the lock pin fastening connection in the horizontal frame in chamber, when the curtain install, with the horizontal frame of installation between the munnion again after the munnion installation, realize the back installation of horizontal frame earlier, the while also makes things convenient for demolishing and changing of horizontal frame. 
36.	Locking system capable of applied to curtain wall opening louver or opening grating	CN109209083	2019-01-15	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	A locking system capable of applied to a curtain wall opening louver or opening grating includes: a lock bar and a lock ring, wherein the lock bar is fixed to a fan frame through a lock bar fixing support, and the lock ring is fixed to a vertical frame through a lock ring fixing support. The lock ring fixing support has a square frame structure with a middle beam arranged in the middle thereof, wherein the middle beam separates the lock ring fixing support into two through holes, the outer one being larger whereas the inner one being smaller. The lock ring is a circle ring and includes two semi-circular rings with lap joint matching structures, the two semi-circular rings being connected and fixed through sunken screws. The lock ring respectively passes through the two through holes to fix the middle beam inside the lock ring. The locking system is beneficial to control on construction quality and repairing and inspection, has good adaptability on practical site conditions, is not high in processing precision demand, is low in cost, and has good adaptability. The system has flexibility in components and can be installed freely, is lower in limitation, and also solves a problem of incapability of compatibility of locking members in flat opening and pull-push structures. 
37.	Curtain wall panel support	US3968608	1976-07-13	SWANGO BILLY J	A support member for connecting panels of a curtain wall to horizontal mullions. Each mullion has a channel formed therein and has shoulders at opposite sides of the channel. The panel support member comprises a rigid bar, positioned in the channel in the mullion, and a tenon extending longitudinally of the bar. Anchor lugs extend outwardly from opposite sides of the tenon. A gasket, having panel receiving slots formed therein, has a groove extending longitudinally thereof to receive the tenon and anchor lugs. As anchor bolts are tightened, drawing the bar into the channel in the mullion, external abutments on the gasket are drawn into the channel such that a portion of the gasket is captured between the shoulders and the lugs to resist deformation of the gasket relative to the load carrying tenon. 

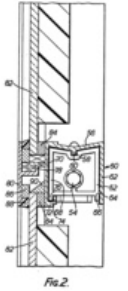
38.	Stopless butt-joint multiple curtainwall system	WO94/04765	1994-03-03	MEDIA CURTAINWALL	A system and method is employed for installing a curtainwall thermally broken multisystem of four sided stopless butt-joint (33) glazing or facing panels with dry gasketed joints. A retainer clip assembly (90) attaches facing panels of glass (30), metal, granite, marble, plastic, acrylic, insulation or the like of single, multiple or composite panels. The curtainwall multisystem (10) can have an irregular geometric impression. All field labor for initial installation or replacement takes place from inside the building. A supporting metal grid can include split mullion interlocking halves (34, 36) which are anchored to the building's structure. A retainer clip assembly (90) reduces tension stress and insures a failsafe thermal break system. Glass, facing panel, louver infills, framed operable window in one plane or multiple planes, dual glazing of glass, acrylic sheets or any combination thereof can be used with the grid. In other embodiment, thermal break spacers are positioned between interlocking portions of a mullion.	
39.	Glass curtain wall keel structure	CN208473065	2019-02-05	CHINA RAILWAY CONSTRUCTION DECORATION ENGINEERING CHINA RAILWAY CONSTRUCTION ENGINEERING	The utility model discloses a glass curtain wall keel structure, the structure includes stand and crossbeam, and the stand includes fixed munnion including activity post and fixed column, fixed column, and the upper end of fixed munnion is provided with the lock pin, the activity post includes the movable munnion the same with fixing the munnion cross section, and the lock pin is less than the closed profile of fixed column for the size. The utility model discloses the complicated installation node of crossbeam of remaining silent among the prior art can be solved, the inconvenient problem of trading is torn open, simple structure is safe firm.	
40.	Brightening engineering rail mounted curtain	CN204781517	2015-11-18	LIAONING QIANGFENG ALUMINUM INDUSTRY ENGINEERING	The utility model provides an improve that brightening engineering rail mounted curtain relates to a latent frame curtain wall construction. The utility model provides an improve latent frame curtain security, mountable brightening lamp decoration to can use the automatic rail mounted curtain of wiping the window machine. The utility model discloses a munnion, the both sides of munnion all are provided with the glass plate, are provided with the clearance between the two glass plates, its characterized in that: the munnion surface is provided with the pull rod groove corresponding to the clearance of glass plate, and the pull rod inslot is provided with lock nut, glass plate surface corresponding to the munnion position through the fixed guide rail support that is provided with of stay bolt, the stay bolt tip with lock nut links to each other, is provided with semi-circular track through branch on the guide rail support, is provided with the slider on the semi-circular track, be provided with the brightening lamp decoration in the semi-circular track.	
41.	Rail mounted curtain	CN204781494	2015-11-18	LIAONING QIANGFENG ALUMINUM INDUSTRY ENGINEERING	The utility model provides an improve that rail mounted curtain relates to a latent frame curtain wall construction. The utility model provides a latent frame curtain security improves to can use the automatic rail mounted curtain who wipes the window machine. The utility model discloses a munnion, the both sides of munnion all are provided with the glass plate, are provided with the clearance between the two glass plates, its characterized in that: the munnion surface is provided with the pull rod groove corresponding to the clearance of glass plate, and the pull rod inslot is provided with lock nut, glass plate surface corresponding to the munnion position through the fixed guide rail support that is provided with of stay bolt, the stay bolt tip with lock nut links to each other, is provided with cylindrical track through branch on the guide rail support, is provided with the slider on the cylindrical track.	
42.	System for structural elements for curtain facades, facade linings, winter gardens, soundproofing walls, fair structures, carports and the like	EP1356172	2003-10-29	RIBIC WALTER	The aim of the invention is to solve various problems that arise in known systems for structural elements. To this end, the invention relates to a system for structural elements, in which vertical member profiles (10), framed surface elements (24,26), support profiles (200) and seals (22) are provided. Said support profiles (200) can be fixed to the vertical member profiles (10), the framed surface elements (24,26) can be fixed to the support profiles (200) and the seals (22) form chambers (K) with the vertical member profiles (10), said chambers containing the support profiles (200) in the appropriate state of assembly.	
43.	Semi-unit glass curtain wall	CN2721746	2005-08-31	JIANWEI SCREEN WALL DECORATION ENGINEERING	The utility model relates to a semi-unit glass curtain wall, comprising hollow glass plates 1-1 and 1-2, a column component and a beam component. The column component comprises a glass plates 1-1 and 1-2, a column component and a beam component. The column component comprises a T-shaped column 2, subsidiary frames 3, locking points 4 and locking blocks 5 self-locking devices. The T-shaped column 2 and the subsidiary frames 3 are arranged at the inside of the glass plate 1-1 and 1-2. The subsidiary frames 3 are symmetrically arranged at the both sides of the mullion in the middle of the T-shaped column 2, and the subsidiary frames 3 are provided with the locking points 4. Corresponding to the locking points 4 on the subsidiary frames 3, the both sides of the mullion in the middle of the T-shaped column 2 are provided with locking blocks 5 fitting to the locking points 4. The utility model has the advantages of high security, good sealability, simple installation and strong adaptability.	

44.	Stone curtain wall with replaceable plane materials	CN204098291	2015-01-14	LIAONING TAIFENG ALUMINIUM ENGINEERING	The utility model discloses a stone curtain wall with replaceable plane materials. The stone curtain wall comprises a plurality of vertical frames installed on a building and a plurality of transverse frames installed on the vertical frames. Locking bars capable of rotating are arranged on the vertical frames through fixedly-connected supports. Brackets are fixedly arranged on the transverse frames. Locking hooks are fixedly arranged on the back faces of the plane materials. The locking hooks and the locking bars are locked and connected in a matched mode. Check blocks are arranged on the lower portions of the back faces of the plane materials. The check block abuts against the brackets. The locking bars are of a cross structure formed by perpendicularly welding rotating shafts and baffles. The rotating shafts are provided with threads to be fixed to the supports through nuts. Notches are formed in the outer ends of the rotating shafts. The baffles and the groove type structures of the locking hooks are fixedly connected in a clamped mode. The stone curtain wall is simple in structure, convenient to install, low in cost, good in performance of deformation in a plane, safe and reliable and saves materials.	
45.	Ventilator system of unitary curtain wall machine	CN107780572	2018-03-09	NETFORTUNE ALUMINIUM WORKS	The invention discloses a ventilator system of a unitary curtain wall machine, comprising a vent duct; a vent line is composed of an aluminum alloy transfer frame, aluminum alloy transverse decoratingstrips and the vent duct; the vent duct is provided with an air inlet and an air outlet; a transverse-flow fan is arranged in an inlet duct and may supply air inward from the air inlet and discharge the air from the air outlet. The ventilator system has the advantages of good operational simplicity and good convenience of use.	
46.	Method for mounting drain pipe to curtain wall	JP04182545	1992-06-30	FUJI OOBAYASHIGUMI	PURPOSE: To simplify execution of a work by previously mounting a drain pipe in a mullion of a west part unit fixed to the floor slab of each floor, coupling the drain pipe to the pipe at a window part at a site, and forming a series of drain pipes. CONSTITUTION: A drain pipe 12 is previously installed in a mullion of a west part unit 3 fixed to a floor slab 1 of each floor. A drain pipe 16 installed to a window part 4 is connected to the above drain pipe at a site to form a series of a drain pipe 20 extending throughout a plurality of floors in a vertical direction. A drain pipe 21 for an air-conditioner 5 located to each floor is coupled to a drain pipe 20 for drainage. This method improves the efficiency of execution of a work. COPYRIGHT: (C)1992,JPO&Japio	
47.	Fitting method for curtain wall	JPH05202568	1993-08-10	FUJISASH	PURPOSE: To attach the fastener in which a mullion of a curtain wall is supported, in the condition that the fastener is not welded. CONSTITUTION: A bolt insertion hole 5 having both wide and narrow parts is provided in a previously buried material 2. Cap shape partition members 6, in which a space 7 where the head 8a of fitting bolts 8 can be inserted is formed on constructing, are provided on the rear of the previously buried member corresponding to this bolt hole. The head of fitting bolt is inserted from the wide part 5a in the space after the floor slab is completed and shifted to the narrow part 5b side to fit it on the rear of the previously buried material and also fix the fastener to the axis 8b of the fitting bolt by a fitting bolt 9.	
48.	Installation structure of installing unit curtain wall in any story heights	CN202831319	2013-03-27	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	The utility model relates to an installation structure of installing a unit curtain wall in any story heights. The installation structure of installing the unit curtain wall in any story heights is characterized by comprising a connecting structure between a priming frame and a main body structure, an inserting and connecting structure among the priming frame and a start element, and an inserting and connecting structure among the priming frame and a shell nosing unit. An aluminum through connection piece is fixed on the priming frame through a bolt. An aluminum angle piece is installed in a vertical frame cavity of the shell nosing unit, and is fixed on the priming frame through a self-tapping and self-drilling nail to lock and fix the shell nosing unit. A long adhesive tape penetrates through an adhesive tape notch at the lower end of the priming frame. An aluminum pressing cover is installed in a groove of the priming frame, and the adhesive tape is pressed in the groove to clamp the shell nosing unit tightly. Nylon cushion blocks are arranged at the front end and the rear end of a lower horizontal frame of the shell nosing unit in a padding mode, and therefore safety of the shell nosing unit is guaranteed. According to the installation structure of installing the unit curtain wall in any story heights, the limitedness of installing from a bottom layer in the prior art is broken, flexibility of field installation is achieved, the installation in various story heights can be achieved at the same time, construction efficiency is greatly improved, construction period in the construction field is shortened.	
49.	Full-concealed frame curtain wall	CN2475769	2002-02-06	SHENYANG KAIXING DECORATION WORK	A safety screen wall with invisible frames consists of a surface material component, a vertical frame and a horizontal frame. The vertical frame and the horizontal frame adopt the sealing structure, and one-way connection of screwed cap, lock pin and board plug, all of which can be installed later. Therefore the utility model has good manufacturability and uniform pressure, the screw nail is hardly to loosen and the surface material is hardly to be damaged, therefore ensuring the security and reliability.	

50.	Double window	JP2000073664	2000-03-07	YKK - YOSHIDA KOGYO KABUSHIKIGAISHA	PROBLEM TO BE SOLVED: To form an existing mullion type curtain wall simply in double windows.SOLUTION: An upper bracket 6 and a lower bracket 7 are installed to the mullion 1 of a mullion type curtain wall, the door end sides of indoor-side movable fittings 8 are mounted rotatably on the upper-lower brackets 6, 7 of the adjacent one mullion 1 by hinges 34, holes for locking are formed to the upper-lower brackets 6, 7 of the adjacent another mullion 1, lock pins are set up at the door end sides of the indoor-side movable fittings 8, and the lock pins are fitted and extracted into and from the holes for locking, locking and locking release are carried out and the indoor-side movable fittings 8 can be opened to the indoor side.Accordingly, the indoor-side movable fittings 8 are post-attached simply, and the mullion type curtain wall is formed in the double windows. 
51.	Curtain is frame pin joint system anyhow	CN207003762	2018-02-13	BEIJING ZHONGHENG JIAYE DECORATION ENGINEERING	The utility model discloses a curtain is frame pin joint system anyhow, its technical scheme main points are: including peg graft in slip lock pin and general inside the horizontal frame slip lock pinrigid coupling in fastening screw in the horizontal frame, be equipped with on the horizontal frame and hold the confession has been seted up to fastening screw spiral shell head counter bore in fastening screw inserts in order to incite somebody to action the slip lock pin with horizontal frame fixed connection's through -hole, the rigid coupling has the confession on the slip lock pin fasteningscrew threaded connection's first enhancement post, the bottom surface of counter bore is equipped with the conical surface, the overhead taper surface that also is equipped with of fastening screw spiral shell, the taper surface of spiral shell head with the conical surface is laminated mutually, horizontal frame is kept away from fastening screw's one side and be equipped with fastening screw'sone side between the distance reduce the thickness in order to reduce horizontal frame, the rigid coupling has the strong reinforcement of the horizontal frame structure of a plurality of promotionsin the horizontal frame. The utility model has the advantages that thickness after the connected system installation is good is smaller. 
52.	Frame curtain pin joint system	CN207003761	2018-02-13	BEIJING ZHONGHENG JIAYE DECORATION ENGINEERING	The utility model discloses a frame curtain pin joint system, its technical scheme main points are: including munnion, horizontal frame, peg graft in horizontal frame both ends are in order to incitesomebody to action horizontal frame with the perpendicular slip lock pin of connecting of munnion, set up in cotter hole on the munnion and pegging graft with will with the cotter hole slip lock pin pin joint in double -end pin on the munnion, double -end pin go up the rigid coupling have with the cotter hole is pegged graft with the pin cover of increase double -end pin with cotter hole area of contact, the rigid coupling has the confession in the cotter hole the borehole jack that the pin cover was pegged graft. The utility model has the advantages that ystem installation well the possibility that breaks away from of back horizontal frame and munnion than lower. 
53.	Lock device for moving ladder	JP2000080875	2000-03-21	TAISEI	PROBLEM TO BE SOLVED: To safely and efficiently perform sealing works and maintenance of a curtain wall by locking a moving ladder to a guide rail fixedly provided at a bracket attached to the curtain wall. SOLUTION: A plate bracket 3 is attached to a mullion 2 of a curtain wall 1 beforehand and a guide rail 4 composed of a steel or stainless steel pipe is fixedly provided to the edge of the bracket 3 parallel to the curtain wall 1. A hook 9 attached to the moving ladder 5 is movably locked to the guide rail 4. The moving ladder 5 can be thus horizontally moved along the guide rail 4 and locked at a target position. This constitution can safely and efficiently perform high lift works such as sealing works and maintenance of the curtain wall 1. 
54.	Latent frame flat -open curtain wall window	CN205990854	2017-03-01	TIANJIN FEIYU CURTAIN WALL DECORATION ENGINEERING	The utility model relates to a latent frame flat -open curtain wall window, include: frame, level setting in the frame the transom and set up the well munnion between transom and frame vertically, install in frame, transom and the region that well munnion encloses and open the window frame just it matches with the upper and lower both ends of opening the casement through friction hinge and connects to open the window frame, a vertical lateral wall of opening the casement can be closely closed on opening the window frame through some latch mechanism. The utility model discloses compare in prior art, can enough satisfy the actually demand of ventilating of user under specific condition, can promote the building facade effect again by a wide margin, and processing, simple to operate is swift. 
55.	Curtain wall.	EP0050838	1982-05-05	ELTREVA ELTREVA AESCH	In a curtain wall with a supporting skeleton of continuous posts and of transoms connected at right angles to these via coupling pieces, and with plate-shaped facade elements (4) inserted into the skeleton spaces and retained in a clamping manner in these, each post and transom having a section aluminium bar (5, 6; 7, 8) facing the room and facing the outside which, separated from one another by an insulating web (9; 10), are each equipped with a bearing rebate (5a, 6a; 7a, 8a) for the clamped edge of the associated facade element (4), the screwless connection between the post and transom is obtained by the following features: a) the section aluminium bar (7, 8) of the transom facing the room and facing the outside and the section aluminium bar (6) of the post facing the outside are of approximately T-shaped cross-section, the T bar forming two of the said bearing rebates (6a; 7a, 8a) whilst the insulating web (9; 10) is fastened in the T foot; b) the section aluminium bars (8) of the transom facing the outside are made in two parts, the two sectional parts (8b, 8c) being connected positively (11) to one another, and the parting plane being in the T foot; c) a horizontal bearing surface (2a) of a tile (2) serves as a support for the two ends of the mutually aligned transoms to be connected to the post; d) the tile (2) engages in at least one cutout (14, 15) in the post for its vertical fixing. 
56.	Side-moving sliding door system	CN108035662	2018-05-15	SHENYANG YUANDA ALUMINIUM INDUSTRY ENGINEERING	The invention discloses a side-moving sliding door system, and relates to the field of building curtain walls. The system comprises a door frame, a fixed door leaf, a sliding door leaf and sliding door rails arranged on the door frame; sliding wheels are connected to the outer sides of keels of upper and lower transverse frames of the sliding door leaf respectively, each sliding wheel is correspondingly installed in one sliding door rail and slides along the sliding door rail, and the fixed door leaf and the sliding door leaf are flush with each other and located on the same plane. In the closed state, the fixed door leaf and the sliding door leaf are flush with each other, and under the combined functions of a sleeve lock buckle and three sealing adhesive tapes, the system can have the water-tight, air-tight and wind-resistant performance under the air pressure of 600 Pa; the external decoration effect is good, in the closed state, the sliding door leaf and the curtain wall surface are integrally flush with each other, and the style is unified; the ventilation amount is large, the viewing effect is good, the larger ventilation amount can be achieved when a sliding door is completely opened, especially in a high floor of a building, spacious holes are opened, the excellent viewing effect can be achieved, and the safety is high; under normal conditions, a railing handrail is assembled at the indoor side of the sliding door leaf, the safety of people can be effectively ensured, and falling from high altitude is prevented. 

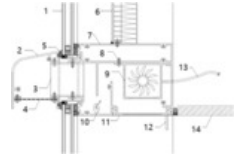
57. **Curain walling assembly** GB2024908 1980-01-16 **NORCROS INVESTMENTS**

The requirement to be met is the provision of a **curtain** walling assembly with neither transomes nor mullions exhibiting, from outside a building, any form of securing means. The mullions of a **curtain** walling assembly are provided with an integral T-section portion defining two recesses arranged to receive edge portions of adjacent panels. The transomes 50 have a detachable T-section facing strip 80 likewise defining recesses and include hook section members 78 interengageable with a hook-section projection 70 of the transome. A load bearing strip 84, a spacer 86 and a sealant 88 serve together to **lock** the facing strip in position. <IMAGE>



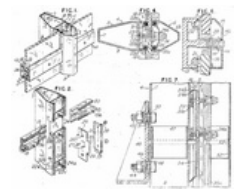
58. **Unit curtain mechanical draft ware system** CN206110411 2017-04-19 **NETFORTUNE ALUMINIUM WORKS**

The utility model discloses an unit **curtain** mechanical draft ware system, including air pipe, and the air pipeline is solid comprises the horizontal frame of aluminum alloy and the horizontal ornamental strip of aluminum alloy and air pipe, just air pipe is equipped with air intake and air outlet, and the intake stack is inside to be equipped with a cross flow fan, just cross flow fan can send into wind from the air intake, just see off through the air outlet. The utility model has the advantages that: easy operation facilitates the use.



59. **Improvements in, or relating to, glazed structures** GB871954 1961-07-05 **HILLS WEST BROMWICH**

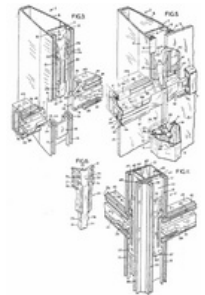
871,954. Glazed **curtain** walling structures. HILLS (WEST BROMWICH) Ltd. July 8, 1957 [July 13, 1956], No. 21822/56. Class 20(3) A glazed **curtain** walling structure comprises auxiliary glazing bars 13 which are connected at right angles to a number of vertical glazing bars 4, each auxiliary bar 13 having end tongues 17 each of which passes through one of a plurality of recesses 12 in the adjacent side walls 8 of the associated bar 4 and is anchored to the latter by a keeper plate 25. Vertical mullions 1, comprising the bars 4 and capping strips 5, support horizontal transoms 2, consisting of the auxiliary bars 13 and capping strips 14, to form a framework having a number of rectangular openings for sheets of glass 3. Each vertical bar 4, located on the inside of the walling, has parallel flanges 9 which extend from the lateral walls 8 and have longitudinal grooves 10 which accommodate resilient packing cords 11. The auxiliary bars 5, cut away at their ends to form the tongues 17, are of general T-shape and have grooves 20 along the free edges of side walls 18 which extend from the heads 16 of the bars, to receive respectively the upper edge 20 of a weather-proofing strip 35, and a resilient packing cord 21. The neighbouring ends of two aligned bars 13, accommodated in a corresponding pair of recesses 12, are connected to the respective vertical bar 4 by means of a corresponding keeper plate 25, a pair of pegs 27 on which engage with some freedom in corresponding holes 17a in the tongues 17. The keeper plate 25 is attached to the bar 4 by a pair of threaded studs 24, one above and one below the respective pair of apertures 12, each stud 24 being threaded into a hole 23 in a strap 22, to engage an end wall 6 of the bar 4, and urge the ends of the strap into engagement with the walls of receiving grooves 1a. The grooves 1a extend between the base portions of the grooves 10 and the adjacent side portions of the wall 6, the straps 22 being provided with angled portions 22a and chamfered ends 22b to facilitate engagement with the walls of the grooves 1a. The keeper plate 25, having holes 26 which receive the studs 24, is secured by nuts 28, which also secure a flashing strip 31 having lateral grooves 33 which receive the corresponding inner sides of the grooves 10 and form, with lips on the plate 25, 30, channels which bridge the apertures 12 as continuations of the grooves 10 for the cords 11. The upper edge of the flashing strip 31 is sealed by mastic against the end wall 6. Similar studs 24a carrying nuts 40 and screwed into straps 22c are secured to the vertical bars 4 to facilitate the attachment of the capping strips 5b. Each sheet of glazing 3 is inserted into an opening in the framework, the upper edge being engaged between the corresponding cord 21 and a depending wing 36 of the respective weather-proofing strip 35, the lateral edges seating upon the cords 11 of the respective vertical bars 4, and the lower edge being bedded in mastic 38. The sheet 3 is retained temporarily in position by clips 39b applied to the studs 24a. Each capping strip 5 has a pair of inwardly directed wings 5e which, when the capping strip is pressed towards the associated vertical bar 4, are sprung into engagement with reduced neck portions on the nuts 40. Grooves along the free edges of the capping strips 5 accommodate sealing cords 39, winged portions 39a of which press upon the corresponding marginal edges of the respective sheets 3. The capping strips 14 are secured to the respective auxiliary bars 13 by bolts which, passing through holes 14c in the crown 14b of the strip, countersunk resilient bushes 41 and holes 35a in the respective waterproofing strip 35, are screwed into corresponding holes 15a in the stem 15 of the associated bar 13. To permit expansion and contraction of the mullions 1, the opposite ends of a spigot-sleeve 47 fit into the adjacent hollow ends of the respective bars 4 which are tied by bolts 44, 45 to a bracket 46 on the main building structure. The bolts 44, 45 pass through longitudinal slots 48, 49 and holes 50, 51 formed respectively in the corresponding ends of the bars 1 and the bracket 46. The capping strips of the two vertically aligned mullions are joined in a similar manner by a spigot 52 having a rib 53 which projects into the clearance between the crowns of the strips 5. A flashing strip 54, similar to the strip 31, is assembled on the studs 24a at the foot of the upper bar 4, the upper end 54a being bent over to contact the corresponding wall 6 and sealed with mastic 54b. The head of the uppermost section of mullion makes sliding engagement with a spigot sleeve similar to the sleeve 47 depending from a bracket fixed to the main structure at the top of the walling. In the case where a single transom only is connected to a mullion, the vertical bar 4 is formed with a single recess 12 to receive the adjacent tongue 17 of the auxiliary bar 13, the keeper plate being formed with a single lipped ear 29 which fits within the recess. If desired, instead of producing each main bar 4 in one piece the wider end wall 6 and the extensions of the side walls 8 may form one unit, and the side walls 8 and the narrower end wall 7 may form a second unit, the first unit being provided with parallel lateral lips which socket into the mouth of, and are secured, e.g. by bolts to, the second unit. Some of the sheets of glass may be replaced by opaque, translucent, or transparent panels, or by windows or ventilators.



60. **Glazed assembly usable in particular in the building** FR1264130 1961-06-19 **HILLS WEST BROMWICH**

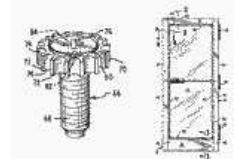
(DE1191537)

961,136. **Curtain** walling. HILLS (WEST BROMWICH) Ltd. June 16, 1960 [June 16, 1959], No. 20544/59. Heading E1R. Mullion bars 1 of a glazing &c. structure are provided with apertures 16 on one or both sides into which the tongues 17 of auxiliary bars are inserted, the tongues being maintained in position by a keeper plate 20 which slides in grooves 13 of the mullion bar and is provided with projections 30 which engage grooves 19 in the tongues 17 and is itself held in place by a channel section cap 31. The keeper 20 and cap 31 are provided with drainage channels and a separate flashing strip 61 of rubber, p.v.c. or metal is applied to the auxiliary bar to assist drainage and to support the glazing panels 5. Grooves 5, 39, 66 are lined with cords 14, 44, 67 on which are seated the glazing panels. Clips 55 on the mullion bars retain the glazing panels in place and support a channel section cover strip 6. Channel section cover strips 7 are assembled along the auxiliary bars by engagement with resilient clips 73 attached to the web 41 by screws. A modification of the mullion bar is used at the corners of the glazing structure (Fig. 11). A further modification (Fig. 14, not shown) of the mullion bar 1 is provided with a longitudinal web projecting perpendicularly to the transverse wall 11, forming two drainage channels in each of which slides a modified keeper plate. A cord-carrying plate for supporting the glazing panel is screwed to the web and itself supports a cover strip to which it is attached by claw-shaped members.



61. **Glass jacks for doors, windows, walls, etc.** US4397124 1983-08-09 **KAWNEER**

A glass jack for doors, windows, walls, etc. having a rectangular frame formed with interconnected stiles and rails providing one or more rectangular openings for receiving a panel, which is mounted in the opening with an outer peripheral edge closely facing adjacent wall surfaces of the surrounding frame members. One or more glass jacks is mounted to extend between the edge of the panel and an adjacent facing wall surface of the frame members at selected point(s) for maintaining an adjustably selected spacing interval between the edge of the panel and the frame member. The glass jack includes an elongated, shank threaded into an opening in the facing wall of the frame member and a radial head having an outer edge surface with ribs and grooves thereon to facilitate manual rotation when adjusting the jacks to control the spacing interval. An outer end surface of the head is positioned to engage the edge of the panel and the end surface is formed with a small deformable annular rib coaxially aligned with respect to the shank. When the jack is tightened the rib is forced against the edge of the glass panel and is deformed in segments provide a stop at engaging corners of opposite faces of the glass panel. The stops formed at the ends of the depressed rib segments resist inadvertent rotation of the glass jacks after a selected spacing or clearance is attained and a flat portion of the head surface extending between the depressed rib segments bears directly against the edge of the glass.



62. **Improvements in or relating to ventilating window structures** GB878794 1961-10-04 **KNAG**

878,794. Ventilating windows. KNAG A. S., A. Nov. 25, 1959 [Jan. 16, 1959], No. 39954/59. Class 20(3) [Also in Group XXV] In a horizontally pivoted ventilating window inner and outer capping strips 105 are movable by a handle, not shown (see Group XXV), from a first position, as shown in Fig. 3, in which they close the gaps between the sash 103 and adjacent window frame member 22, 23 and prevent movement of the sash through 180 degrees to a second position in which the sash is freed to pivot. As shown, each of the gaps between the frame side members 22, 23, formed as the crossbars of an I-section mullion in a curtain walling construction, the outer one 22 being covered by a channel member 39 and the inner one 23 by a facing wooden member 37, and the pivoted double glazed sash 103 is spanned by a capping strip 105 having at one edge a flange 111 to contact with a sealing strip 115 or 116 on the side members 22, 23 respectively and at the other edge a sealing strip 112, 113, to contact with the sash. Each strip 105 has a web 117 terminating in a hinge member 119 which pivots on a nylon bush 120 on a pin 118 on a bracket 121 supported from the web 21 of the transom. Specification 878,796 is referred to.

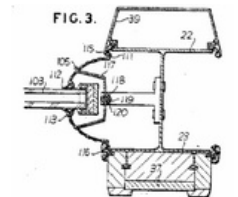


FIG.

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ATTORNEY

SHANGHAI BRIGHT CURTAIN WALL
ENGINEERING

Technical drawing of a door handle assembly. The drawing shows a side view of the handle mechanism. Numbered callouts include: 3 (bottom plate), 4 (bottom plate screw), 6 (bottom plate screw), 7 (top plate), 8 (top plate screw), and 9 (top plate screw).

CADILLAC RUBBER & PLASTICS

KENNY SIMON JOSEPH
SIMON JOSEPH KENNY
GORMAN DANIEL PATRICK O

[illegible]

GARDINER SONS

MAYFAIR INDUSTRY

The utility model discloses an indoor theftproof window, comprising a frame and a theftproof net; wherein, the frame is fixed on the **wall** of the indoor window periphery; the theftproof net is a metal net and is connected with the frame; and the frame is fixedly connected with one side of the theftproof net at least. The utility model has the advantages that the indoor theftproof window can be fitted in the room, which can overcome a series of drawbacks of the indoor theftproof window; and the indoor theftproof window is not only safe and reliable, but can also be conveniently opened and closed indoors, without influence on the outdoor beautiful appearance.

