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(54) **GLAZING SYSTEM**

VERGLASUNGSSYSTEM

SYSTEME DE VITRAGE

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Description

Detailed Description

Technical Field

[0001] The current invention relates to a unique and compact self locking mechanism, composed of two aluminum profiles designed in such a way to self lock when Glass is placed on the female profile and the male profile is inserted and the mechanism further tightens grip on the glass edges when pushed in a grooved rubber (which is mandatory for glazing to avoid touching metal, to allow expansion and to absorb impacts).

Technical Background:

[0002] US Patent No. 500 7221 entitled "A SNAP-IN GLAZING POCKET FILLER" is disclosed a snap-in pocket filler for use with a structural frame member having an unused Glazing Pocket" or to be used as a Gap Filler on Aluminum Profiles to cover the unused area for aesthetic reason. See as well JP 10 184 208 A.

[0003] It was noticed that a proper glazing system was lacking in the market to meet the increasing demand for thicker Glazing (e.g.: shop fronts & partitions) and it has become a necessity for those skilled in the art to develop a system which must be simple, technically safe and aesthetically impressive.

Disclosure of the Invention:

[0004] Aluminum profiles generally available now are intended for standard window glazing and used by many for thicker glazing by compromising safety; quality and aesthetic appeal as no other are options available. For maximum visibility of the showrooms, designers insist frameless glazing with lighter frames around. Technicians use "U" channels, in which glass panels allowed to stand free and thus tend to move horizontally due to loose fixing at ends with silicone.

[0005] Some professional pioneers like Dorma (Germany) developed heavy profiles for thicker glass application which requires fastening by screws which further should be covered for aesthetic reasons and consequently the work becomes complicated, laborious and eventually expensive.

[0006] In view of the above factors and considering the demand for faster glazing, the current invention according to clai 1 emphasizes the issue of safety and at the same time addresses the importance for aesthetic appeal, allowing enough clearance for glazing (one could decide glass size before installing frames at site) and making site installation easy.

Brief Description of the Drawings

[0007]

- Fig 1 & Fig 2: Female and Male profiles.
- Fig 3: Fixing of profile using a screw.
- Fig 4: Glass Packing on the part 2 Profile (minimum 2 per Glass panel).
- Fig 5: 10mm thick Glass (suitable to the frame size) placed over the Part 2 profile in Fig 5.
- Fig 6: Profile Part 1 through the gap on Profile Part 2.
- Fig 7: Insertion of grooved rubber beading between the gap of profiles from both sides of the glass panel using force.
- Fig 8: Scientific principle of the mechanism of the glazing system explained.

Preferred Embodiments of the Invention

[0008] The Glazing System consists of two extruded Aluminum profiles (Male & Female) designed in such a way to create a secure space for keeping Glass Panels safely & tightly in position. The important aspect of the invention is that when the Glass panels placed on the Female profile and the Male profile is inserted and the Rubber beading is forced in (by hand) between the Glass & Profiles (both sides) creates outward forces on the upper legs of the profiles (forcing them apart). The turning movements at the pivotal fulcrum forces the locking system together which is due to the curved hooking parts on the profiles (at bottom) engage each other to self lock and thus arrest the profiles in position.

Method of Industrial Application of the Invention

[0009] The scientific principles used are the NEWTON'S LAW OF FORCE and the property of Elasticity of the rubber beading and the transmission of the rotational moments of the moving parts around the Fulerum. The following explanation is read in relation to Fig 8:

F - Outward Force (Due to Rubber Beading)
P - Inward Force (Creating the Locking)
C - Fulcrum Point

[0010] Insertion of the rubber beading between the glass and the profile sections (Part 1 & 2) creates outward forces (F) to the legs of both sections forcing them apart "F". A turning moment at the pivotal fulcrum (C) forces the locking system together (P). The locking system is due t the curved hooking profile of the lock built into the legs of the sections (Male & Female) creating mating edges, hence arresting the profile section in position.

[0011] The pre-determined variables are the sizing of the glass and that of the rubber beading. In this arrangement any external forces applied due to conditions like wind or vibrations caused by physical movements whose action may act to dislodge the Glass from its set position only acts to further tighten the fastening mechanism of this system to arrest the Glass panel in position.

Claims

1. Glazing system comprising
two aluminium profiles having a male and a female aluminium profile (1, 2) creating a secure space for keeping a glass panel tightly in position, said profiles (1, 2) forming a self locking mechanism, and
a grooved rubber beading positioned between the glass panel and the profiles (1, 2), said grooved rubber beading being forced in between the glass panel and the profiles (1, 2) and creating outward forces on the upper legs of the profiles (1, 2) forcing them apart,
said profiles (1, 2) comprising curved hooking parts adapted such that the turning movements provided by said outward forces and external forces at the pivotal fulcrum forces the locking mechanism together to further tighten the locking mechanism in order to arrest the glass panel in position.

Patentansprüche

1. Verglasungssystem, umfassend zwei Aluminiumprofile, die ein Einsteckprofil und ein Aufnahmeprofil (1, 2) aus Aluminium bilden, welche einen Sicherungsraum zum Festhalten der Glasscheibe an Ort und Stelle schaffen, wobei diese Profile (1, 2) einen Selbstverriegelungs-Mechanismus formen, und mit einem genuteten Gummiwulst, der zwischen der Glasscheibe und den Profilen (1, 2) angeordnet ist und zwischen die Glasscheibe und die Profile (1, 2) gedrückt wird und auf die oberen Schenkel der Profile (1, 2) einwirkende Außenkräfte erzeugt, die sie auseinanderdrücken, wobei diese Profile (1, 2) gebogene Hakenteile aufweisen, die so geartet sind, daß die Drehmomente, die von den Außenkräften erzeugt werden, sowie die äußeren Kräfte an dem Anlenkpunkt den Verriegelungs-Mechanismus zusammendrücken, um den Verriegelungs-Mechanismus weiter festzuziehen und dadurch die Glasscheibe in ihrer Lage zu arretieren.

Revendications

1. Système de vitrage comprenant
deux profilés en aluminium ayant un profilé mâle et un profilé femelle en aluminium (1, 2) qui créent un espace sûr pour maintenir un panneau de verre de façon serrée en position, lesdits profilés (1, 2) formant un mécanisme à autoblocage, et
un bourrelet en caoutchouc rainuré positionné entre le panneau de verre et les profilés (1, 2), ledit bourrelet en caoutchouc rainuré étant forcé à entrer entre le panneau de verre et les profilés (1, 2) et créant des forces vers l'extérieur sur les branches supérieures des profilés (1, 2) en les forçant en écartement,
lesdits profilés (1, 2) comprenant des parties d'accrochage incurvées adaptées de telle façon que les mouvements de rotation provoqués par lesdites forces vers l'extérieur et par des forces externes au niveau de l'axe de pivotement forcent le mécanisme de verrouillage en rapprochement pour renforcer le serrage du mécanisme de blocage afin d'arrêter le panneau de verre en position.

Method Of Implementation
Sequence of Assembly

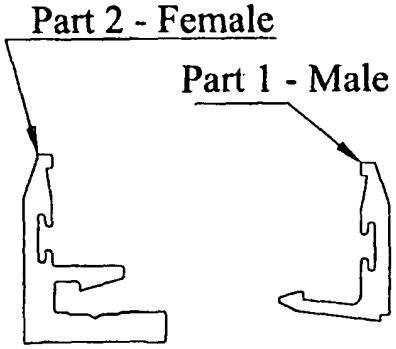

Fig: 1 Fig: 2

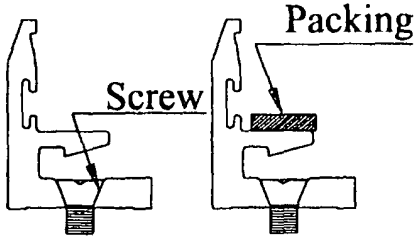

Fig: 3 Fig: 4

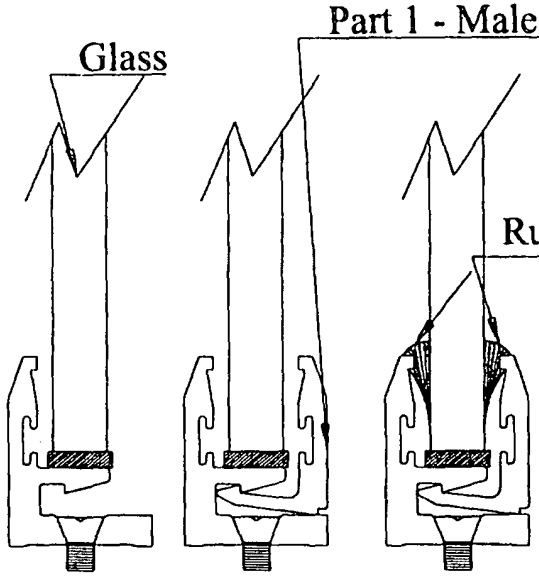

Fig: 5 Fig: 6 Fig: 7

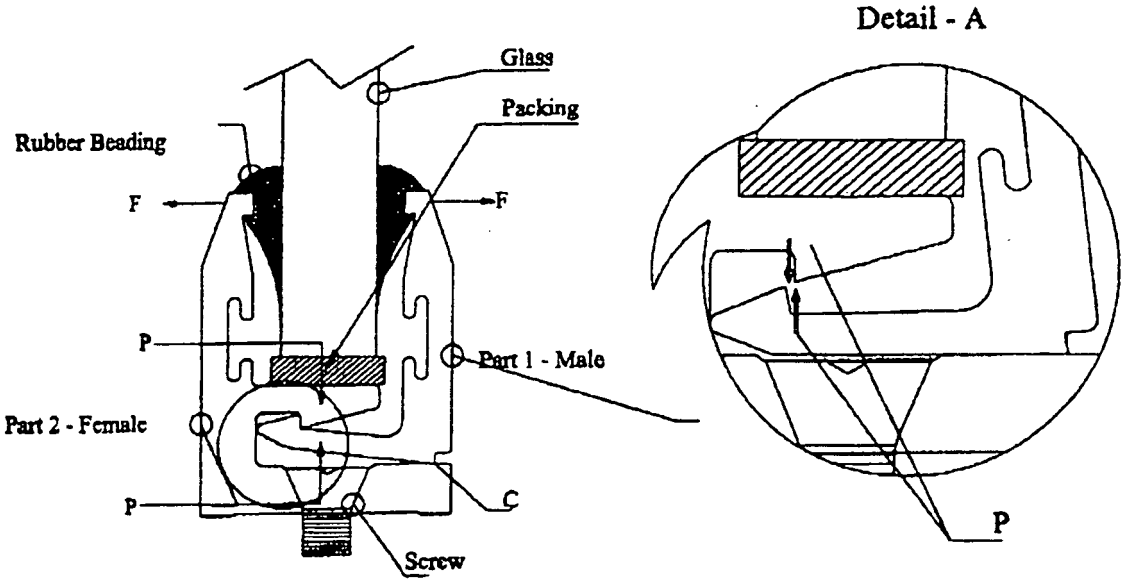
Detail - A
Glass
Packing
Rubber Beading
F
F
P
Part 1 - Male
Part 2 - Female
P
C
Screw
P

Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 5007221 A **[0002]**
- JP 10184208 A **[0002]**