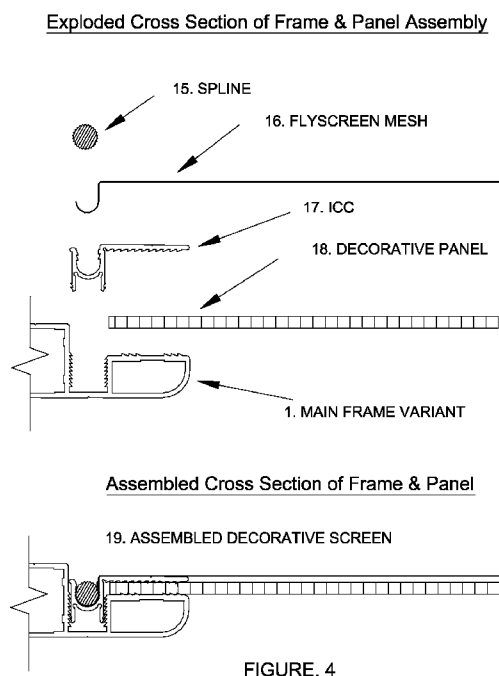




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(54) **Title:** SECURITY SCREEN ASSEMBLY



(57) **Abstract:** The present invention relates to a security/barrier screen assembly adapted to fit into openings, door and window frames of buildings used for domestic, decorative and commercial purposes, whereby the aluminium security extrusion frame is housing an aluminium profile cut, or perforated design/motif. It was developed as a result of the inability of existing aluminium security window and door framing systems, to adjust and hold decorative aluminium panels of varying thicknesses. The invention also overcomes other perceived limitations of existing framing systems in the market.



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Title of the Invention

Security Screen Assembly

Field of the Invention

The present invention relates to an aluminium security/barrier screen assembly
5 adapted to fit into openings, door and window frames of buildings used for domestic,
decorative and commercial purposes, whereby the aluminium security extrusion
frame is housing a decorative aluminium panel. Applications are across door,
window, privacy screening, fencing, balustrading, car parks, security and industries
requiring partitioning and or screening.

10

Background of the Invention

Typically, security screens include a frame consisting of a plurality of frame members
and a sheet of stainless steel mesh secured to adjacent frame members by clamping
members. The clamping members are usually fastened to the frame members using
15 a plurality of threaded fasteners or rivets spaced along the length of the frame
members. The fasteners are typically hidden from view by a cover strip made from a
plastic material which is not very aesthetic, the cover strip being mounted on the
internal face of the frame member.

20 Unfortunately, security screens of this type described above are not always effective
in preventing intruders passing through a window or door fitted with same. For
example, thieves who may have gained entry into the house may use a cold chisel to
sever the heads of rivets used to fasten clamping members to the frame members

thereby enabling thieves to dislodge the stainless steel mesh. Similarly, a screw driver may be used to unscrew the threaded fasteners used to secure the mesh to the screen.

- 5 Furthermore, the pressure applied by the fasteners to the mesh is not evenly distributed along the length of the mesh and wherein as a consequence the screens include weak spots located between adjacent fasteners.

Other types of screens may include gaps between the clamping members and the
10 mesh and/or frame member which are wide enough to allow persons to insert a screw driver or such like there between so as to prise the mesh apart or dislodge the clamping members.

It is also noted that the clamping members and the frame members are usually
15 manufactured from aluminum and wherein the fasteners are manufactured from a variety of metals including steel and brass. Contact between dissimilar metals, such as between the clamping members and the stainless steel mesh, or the brass screws and the clamping members, often leads to galvanic corrosion of at least one of the elements of the screens referred to above which in turn has a detrimental
20 effect on the efficiency and aesthetics of same. For example, due to the corrosive effects of sea air, the fasteners often become brittle and whereby their ability to withstand blows to the stainless steel mesh is severely inhibited.

It is noted that security screens of the type described above are time consuming to
25 manufacture.

Another limitation within the industry is that security rated screens currently lack the ability to simultaneously provide effective small insect/midge protection. Currently door screens have either effective insect/midge protection without adequate security protection, or they have security protection without adequate insect/midge protection.

5 The invention came about as a result of the need for an aluminium security door and window frame system that was capable of adjusting to support a range of panel thicknesses without the need for welding or custom manufacture. When the need arose and the market researched, it became evident that the market, in particular the security door and window industry, had nothing available to provide an adjustable
10 capability which would enable the securing of panels of varying thicknesses. While there were various aluminium security screens in the market, they could only support a single thickness panel or screen and none were supporting decorative aluminium panels as defined herein.

In many instances it was also the case that, because the frame was made from
15 aluminium and the screen was made from stainless steel, that this resulted in galvanic corrosion as a result of the use of dissimilar metals, thus necessitating the use of separating insulator strips. In other instances, wherein the fasteners were manufactured from a variety of metals including steel and brass, this often led to corrosion of at least one of the elements of the screen (as a result of dissimilar
20 metals causing galvanic corrosion) which in turn had a detrimental effect on the efficiency and aesthetics of same.

It was also found that aluminium security door systems that use heavy duty stainless steel mesh or aluminium mesh, some of which attempt to facilitate one-way viewing, couldn't simultaneously support standard industry fly or midge mesh, thus they

couldn't provide an effective barrier to small insects, such as midge and sand flies. As such, it was recognized that currently, aluminium door screens have either effective insect/midge protection without adequate security protection, or they have security protection without adequate insect/midge protection.

5 The reason behind the need for an aluminium security door and window frame that could adjust to accommodate panels of varying thicknesses came about for two reasons:

- Firstly, not all designs, patterns, pictures or motifs (DPPM's) can be produced using the same thickness of aluminium sheet without causing unacceptable distortion to
10 the panel. This is due to the heat and/or friction generated during the profiling (where "profiling" is defined as any one of the processes of laser cutting, router cutting, water jet cutting, jig saw cutting, plasma cutting, punching or other types of processes applied to produce a "decorative aluminium panel" (as defined in section, "Detailed Description of the Invention – The Variable Thickness Decorative Panel") -
15 See Fig 3 – (12) & (13) for examples) with different DPPM's causing lesser or greater levels of distortion depending on the intricacy of the DPPM and the thickness of the panel. The way to overcome or minimize distortion in those DPPM's that cause warping and distortion in panels, is to increase and in some instances, decrease, the thickness of the panel.

20 - Secondly, a system for supporting decorative panels of different thicknesses was also required because some clients demand a heavier duty door or window security screen and hence require a greater panel thickness. Previously, the only way of achieving this higher level of security was to have a custom made steel or aluminium door made.

Prior to this invention, there were no aluminium proprietary security door or window frames that could meet these needs, with the only means of securing thicker panels being by welding or fixing them into a box extrusion or similar. In so doing, such solutions are unable to utilize industry standard security fittings and components. As such, the current invention is unique in its ability to automatically adjust and secure panels of various thicknesses. It is also unique in that it can achieve this while still utilizing security industry standard fittings and components (such as corner stakes, handles, flyscreen mesh (fly and midge), locks and hinges. The present invention was designed to also overcome the other limitations indicated above.

The present invention aims to alleviate at least one of the above disadvantages and to provide a screen assembly which will be reliable and efficient in use. Other objects and advantages of this invention will hereinafter become apparent.

Summary of the Invention

The present invention provides a security or barrier screen assembly comprising:

- (i) A panel;
- (ii) a main frame including a recessed elongated channel; the top inner section of the main frame includes a first elongated interconnecting member or clamping bed; and
- (iii) an interlocking clamping clip including a second elongated interconnecting member or clamping arm; wherein the channel is adapted to receive the clip and applying pressure to same clip engages the frame so as to secure the panel in between the arm and the bed.

Preferably, the clip is adapted to house the panel from 0.2 to 10mm thick.

Preferably, the screen is a decorative security screen designed to fit a door or window.

Preferably, the frame can accommodate fly or midge mesh or shade cloth.

Preferably, the assembly further comprises a fly screen spline channel for securing an optional fly screen mesh or shade cloth.

Preferably, the screen is a security screen.

- 5 Preferably, the security door and window extrusion frame housing an aluminium profile cut or perforated panel.

Preferably, the screen is an aluminium profile cut, generally laser/router or plasma cut, motif or perforated design held by the aluminium extrusion security door or window frame.

- 10 In another aspect, the present invention provides a security or barrier screen assembly comprising:
- (i) A panel;
 - (ii) a main frame including a recessed elongated channel; the top inner section of the main frame includes an elongated clamping bed; and
 - 15 (iii) an interlocking clamping clip including an elongated supporting arm not integrally formed with the main frame; wherein the channel is adapted to receive the clip and applying pressure to the clamping arm engages the frame so as to secure the panel in between the bed and the arm.
- 20 In another aspect, the present invention provides a method of securing a screen or panel using the assembly and clamping clip according to the present invention.

- 25 In another aspect, the present invention provides a method of producing a decorative aluminium profile cut or perforated aluminium screen into a security door or window frame according to the present invention wherein a profile cut is generally laser cut, router cut or plasma cut.

In another aspect, the present invention provides fastening of the panel requiring pressure fitting of the adjustable clip inserted into the frame resulting in mechanical clamping and fastening of a panel in the screen.

- 30 Preferably, the arm and bed comprise grooves or teeth which, when engaged, secure the panel.

Preferably, the grooves or teeth enable adjustment of the panel width at 0.5mm intervals.

Preferably, the recessed channel is substantially U shaped.

- 35 Preferably, the Clamping Clip locks into place via a spring action.

Brief Description of the drawings

Figure 1 shows DETAILED VIEW OF VARIANT MAIN FRAME

Figure 2 shows DETAILED VIEW OF INTERLOCKING CLAMPING CLIP (ICC)

Figure 3 shows EXAMPLE OF DECORATIVE PANEL

5 **Figure 4** shows EXPLODED & ASSEMBLED CROSS SECTIONS OF FRAME & PANEL ASSEMBLY

Figure 5 shows EXAMPLES OF FRAME ASSEMBLY ADJUSTING TO SECURE PANELS OF VARYING THICKNESSES

Figure 6 shows EXAMPLE OF AN ASSEMBLED SECURITY/BARRIER SCREEN

10 **Figure 7** shows EXAMPLE of DECORATIVE SCREEN WINDOW ASSEMBLY

Figure 8 shows ASSEMBLED & EXPLODED VIEWS OF VARIANT DECORATIVE WINDOW SCREEN

Detailed Description of the invention

15 The present invention relates to a security/barrier screen assembly adapted to fit into a space or doors and windows of buildings used for domestic, decorative and commercial purposes.

Accordingly, the present invention provides a flexible aluminium extrusion frame fastening system with many variants designed to hold decorative panels of various
20 sizes and thicknesses which are secured by a unique interlocking friction fit clip (Interlocking Clamping Clip - ICC), with the option of securing a flyscreen mesh or shade cloth via the spline channel incorporated in the clip and designed to use industry standard security door/window fittings and components. Also, because
25 use of dissimilar metals is eliminated.

The present invention has particular, but not exclusive, application to a security/barrier screen assembly for openings, doors and windows of buildings including domestic residences and such like, and for illustrative purposes reference will be made to such application. Particularly, the present invention relates to

5 securing decorative panels of varying thickness, with the ability to simultaneously provide small insect/midge protection. However, it is to be understood that this invention could be used in other applications, such as security screens for motor vehicles including those used by police to detain persons. This invention may also be used in the construction of insect screens for doors and windows as well as screens

10 for covering openings in drains, air conditioning vents and such like, or as a wall or partition in shopping or commercial centers or for patio screening, or for structures such as bus shelters and telephone boxes.

The present invention relates to a security/barrier screen comprising:

- 15 a panel adapted to fit into an opening or space;
- a pair of interconnecting members including an interlocking clamping clip which can accommodate a panel/screen of 0.2mm to 10mm thick;
- and a channel member to receive the clip wherein the interconnecting members are adapted to receive and engage the frame so as to secure the panel.
- 20 Particularly, the present invention provides an adjustable extrusion frame fastening system with many variants designed to hold panels of various sizes and thicknesses, secured by a unique adjustable friction fit clip which incorporates a flyscreen spline channel for securing an optional fly screen mesh or shade cloth.

The interlocking clamping clip facilitates fitting of panels, particularly decorative and security panels of flexible configurations.

The peripheral frame may be formed from extruded metal. The metal may be aluminium.

- 5 The spline may be used to retain mesh (preferably fly or midge) within the assembly. In order to effect this retaining within the screen, the mesh can be trapped by the spline and forced into the space under pressure so as to provide a tight drum-like fitting of the mesh over the security screen assembly.

10 The mesh is held in the frame by a plastic spline that runs along a channel around the perimeter of the frame.

The extrusion frame according to the present invention is unique. This extrusion was invented to house an aluminium profile cut (generally laser cut) or perforated image as defined herein (see "The Variable Thickness Decorative Panel"). This invention arose as there is nothing in the market place to accommodate this specifically.

- 15 In one embodiment, the present invention provides an aluminium decorative screen for fitting into a security extrusion frame.

The invention relates to putting a decorative aluminium profile cut or perforated aluminium screen into a security door or window frame, where by a profile cut is generally laser cut, router cut or plasma cut. In particular, the present invention
20 provides an aluminium extrusion frame fastening system with many variants designed to hold decorative panels of various sizes and thicknesses, secured by a unique self-adjusting friction fit clip (ICC) which incorporates a fly-screen spline channel for securing an optional fly screen (fly or midge) mesh or shade cloth.

The Main-Frame (Fig 1)

- The primary (female) extrusion (Fig 1) in the framing system.
- Incorporates a channel (Fig 1 – (2)) for housing and securing the Interlocking Clamping Clip (ICC) (Fig 2).
- 5 - The channel (Fig 1 – (2)) has teeth along the sides (Fig 1 – (5)) which engage and interlock with corresponding teeth (Fig 2 –(7)) on the sides of the ICC (Fig 2)
- The channel (Fig 1 – (2)) allows the ICC (Fig 2) to lock in at any point from the first teeth (Fig 1 – (5)) at the top through to the bottom teeth (Fig 1 – (5)).
- 10 - The ICC (Fig 2) continues to penetrate and lock into the channel (Fig 1 – (2)) until the clamping arm (Fig 2- (9)) on the ICC (Fig 2) meets and is flush with the decorative panel (Fig 4 – (18)), at which point the panel is secured.
- Teeth on the Main Frame (Fig 1 – (3)) bite into the underside of the decorative panel (Fig 4 – (18)) when the ICC (Fig 4 – (17)) is pushed home, further
- 15 - securing the panel so there is no/minimal movement.
- The point at which the ICC (Fig 4 – (17)) first interlocks, through to the point where the ICC bottoms out in the channel of the main frame (Fig 1 – (2)), determines the range in panel thickness that can be supported.
- The Main Frame (Fig 1) is sized to accommodate industry standard door and
- 20 - window fixtures, fittings and components, such as, corner stakes (see Fig 8 – (32) as an example), hinges, flyscreen mesh (fly or midge), locks and handles.

The Interlocking Clamping Clip or ICC (Fig 2)

- The secondary (male) extrusion in the framing system.

- Fits and locks into the Main-Frame channel (Fig 1 – (2)) via the teeth on the sides of the ICC (Fig 2 – (7)) which lock into the corresponding teeth (Fig 1 – (5)) in the Main-Frame channel (Fig 1 – (2)).
- The above inter-connection is further facilitated by the design of the ICC (Fig 2) which incorporates a spring action (Fig 2 – (8)) which applies an outward pressure to the two side legs (Fig 2 – (11)) of the ICC (Fig 2), thus providing additional strength to the union.
- Is an automatic, self-adjusting Interlocking Clamping Clip which slots into the Main Frame channel (Fig 1 – (2)) to accommodate variable thicknesses of panels that the frame is securing (See examples of securing varying thicknesses at Fig 5- (20), (21) & (22)).
- Has a clamping arm (Fig 2 – (9)) which meets and secures the top side of the decorative panel (Fig 4 – (18)) once the ICC is pushed home (Fig 4 (19) and Fig 5 (20), (21) & (22) for examples.)
- Teeth on the under-side of the ICC arm (Fig 2 – (10)) bite into the top-side of the decorative panel (Fig 4– (18)) when the ICC (Fig 2) is pushed home and the arm (Fig 2 – (9)) is flush with the panel (Fig 4 – (18)), thus further securing the panel so there is no/minimal movement - (See Fig 4 (19) and Fig 5 (20), (21) & (22) for examples.)
- Facilitates fitting of decorative panels (Fig 3), of varying sizes and thicknesses.
- Incorporates a spline channel (Fig 2 – (6)) to allow fly-screen mesh (fly or midge) or cloth (Fig 4 – (16)) to be installed.

The Variable Thickness Decorative Panel (Fig 3 –(12) & (13))

- “Decorative panel” here-in means an aluminium panel which has had an image – where the term image means a Design, Picture, Pattern or Motif (DPPM) - either perforated or punched (Fig 3 – (13) for example), laser cut (Fig 3 –(12) for example), plasma cut, router cut, or other process performed, into the panel.
- When perforated patterns are referred to, this means a DPPM created using a minimum of two (2) different sized holes (Fig 3 –(13) which may be round or some other shape/s.
- Created to fit into the above described framing system to produce a decorative barrier/security screen (see Fig 6 – (23) & (25) for an example of Security Door, and Fig 7 – (26) & (27) for an example of a Security Window).
- Can be of varying dimensions and thicknesses (see Fig 5 - (20), (21) & (22) for examples of varying thickness panels, and Figs 3 – (12) & (13) illustrating two different sized panels)

The Spline Channel (See Fig 2 – (6))

- For holding a spline rope (Fig 4 – (15)) to secure a flyscreen mesh (fly or midge) or cloth (Fig 4 – (16)).
- Sized to accommodate industry standard security spline and flyscreen mesh.

The assembly according to the present invention comprises two separate extruded members. The first member contains the main frame and the second member comprises the interlocking clip, as two distinct components. The main frame and the clip are not integrally formed.

In another aspect of the invention, the main frame and the clip comprise first and second protruding members respectively which form an elongate recess adapted to receive and securely retain an edge of a panel. The two protruding members or arms include mutually facing internal surfaces, each internal surface includes a plurality of elongated engagement teeth or grooves.

Referring to Figure 1, there is provided a main frame 1 for use in a framed security window or door security screen assembly. As is typical in the art, the frame member is formed from extruded aluminium. However, it will be appreciated that other materials could be used without departing from the scope of the invention.

10

The frame member 1 includes a rectangular hollow section (RHS) and an elongate recess generally extending from same. The elongate recess includes first and second mutually facing internal surfaces. On the first internal surface, a first plurality of engagement teeth is integrally formed. Similarly, on the second internal surface a second plurality of elongate engagement teeth is integrally formed. Supplemental recess channel is also provided for fixing an optional fly screen.

15

As described in more detail below, in accordance with a first application of the invention, the recess is used for secure engagement with a security panel whereby the plurality of elongate engagement teeth on the first and second internal surfaces engage with at least one side of the security panel.

20

In another embodiment, the present invention provides a security/barrier screen assembly comprising:

- (i) a *Main Frame* (Fig A) which has a channel to receive an Interlocking clamping clip; Where the term “main frame” is used, this generally refers to, but is not limited to, the primary surrounding extrusion used to create a security/barrier door or window screen .
- 5 (ii) an *Interlocking Clamping Clip(ICC)* (Fig B) which, when assembled with the main frame, automatically self adjusts to accommodate various thickness panels.
- 10 (iii) a *variable thickness panel* (Fig C) that is clamped between the mainframe and Interlocking Clamping Clip (ICC). Where the term “panel” is used this is referring to a ‘Decorative Aluminium Panel’ to which the definition indicated herein applies – see “Detailed Description of the Invention – The Variable Thickness Decorative Panel”
- (iv) a *spline channel* (Fig 2 – (6) within the *Interlocking Clamping Clip (ICC)* (Fig 2) that can secure a *fine fly screen mesh (fly or midge) or cloth* (Fig 4 – (16)).

15 In another embodiment, the present invention provides the method of securing various thickness panels in an extruded Aluminium Main Frame, utilising a one-way, pressure-fit clamping clip (Interlocking Clamping Clip - ICC).

In another embodiment, the Interlocking Clamping Clip (ICC) automatically adjusts to secure various thickness panels, that is, it is a self adjusting clip.

20 In another embodiment, the Interlocking Clamping Clip (ICC) is a uni-directional clamp that, once engaged, cannot be pulled apart from the Main-Frame.

In another embodiment, the Interlocking Clamping Clip (ICC) locks into place via a spring action.

25 In another embodiment, the Interlocking Clamping Clip (ICC) cannot be removed due to the one-way teeth interlocking with teeth in the mainframe.

In another embodiment, the Interlocking Clamping Clip (ICC) incorporates its own channel (a spline channel) for housing a spline for the purpose of securing a fine mesh, fabric or shade cloth.

30 In another embodiment, the main frame, Interlocking Clamping Clip (ICC) and decorative aluminium panel form a security/barrier door or window frame.

35 In another embodiment, panels of various thickness are “Decorative Aluminium Profile Cut” or “Decorative Perforated” panels, hence-forth referred to as “Decorative Panels”. ‘Decorative Aluminum Profile Cut’ being, laser cut, router cut, 3D printed, water jet cut, jig saw cut or plasma cut. See Fig 3 – (12); ‘Decorative Perforated’, being an Aluminum panel or screen that has a minimum of 2 differing size holes that when combined form a pattern or motif. See Fig 3 –(13) & (14)

In another embodiment, the panel is mechanically secured via pressure fitting the Interlocking Clamping Clip (ICC).

In another embodiment, a 'Decorative Aluminium Profile Cut' or 'Decorative Perforated' panel is incorporated in an aluminium extruded barrier/security door or window frame.

5 In another embodiment, no dis-similar metals are used, thus eliminating galvanic corrosion caused from dissimilar metals.

In another embodiment, the design can be scaled up or down to accommodate differing applications and support greater thickness panels.

In another embodiment, the frame design can use existing industry standard components such as corner stakes, hinges, handles and locks.

10 In another embodiment, the invention provides the first proprietary security door and window framing system capable of supporting variable thickness panels.

In another embodiment, the invention provides the first proprietary security door and window framing system incorporating decorative aluminium panels (as defined herein).

15

Applications of the security/barrier screen include doors and windows, providing privacy screening, fencing, balustrading, securing car parks and industries requiring partitioning and or screening.

20 **Assembly instructions**

The method of fastening requires pressure fitting of the adjustable clip (17) inserted into variants of the main frame (1) resulting in mechanical clamping and fastening of a panel (18). A higher strength and or higher security rating can be achieved by further securing the variant frame (1), panel (18) and Friction fit clip (17) using
25 mechanical, chemical or other forms of fasteners. Use of like materials will prevent galvanic corrosion. Use of dissimilar metallic materials is not recommended without a barrier or isolative layer to prevent material contact of dissimilar materials.

Fly screen mesh or shade cloth is to be secured by inserting the mesh or cloth (16) along with spline (15) into the channel on the clip section (6).

The clip fits into the recessed channel of the main frame.

Importantly, the adjustable clamping clip (17) can house a panel from 0.2mm to
5 10mm.

In use, applying pressure to the second interconnecting member adjusts the clip such that the panel is secured between the first and second interconnecting members. The grooves positioned in the opposing walls of the recessed channel and in top section protruding outwardly of the main frame, and in the clip, enable
10 adjustment of the clip so as to engage and secure the panel

Assembly instructions

The method of fastening requires pressure fitting of the ICC (Fig 4 – (17)) inserted into the Main Frame channel (Fig 1 – (2)) resulting in the mechanical clamping and fastening of a panel (Fig 3) as per examples at Fig 5. A higher strength and or higher
15 security rating can be achieved by further securing the Main Frame (Fig 1), panel (Fig 3) and the ICC (Fig 2) using mechanical, chemical or other forms of fastening. Use of like materials will prevent galvanic corrosion.

Fly screen mesh or shade cloth (Fig 4 – (16)) is secured via a spline (Fig 4 – (15) (similar to plastic or foam rope) being placed over the mesh or cloth (Fig 4 – (16))
20 and being pressed into the spline channel (Fig 2 – (6) in the ICC (Fig 2).

NB: The panel (Fig 3) can be of variable thickness (preferably between .2mm and 10mm) with the ICC (Fig 2) slotting into the main frame (Fig 1) and automatically adjusting to secure the panel (Fig 5).

Fig 1 = Variant Main Frame

Fig 2 = Interlocking Clamping Clip (ICC)

Fig 3 = Examples of decorative aluminium panels

Fig 4 = Exploded & assembled cross-sections of frame & panel assembly

Fig 5 = Examples of security door frame securing differing panel thicknesses

Fig 6 = Example of an assembled security/barrier screen door

Fig 7 = Example of an assembled decorative window screen

Fig 8 = Assembled & exploded view of decorative screen window corner assembly

The design of the screen accommodates for a panel as well as fly mesh/shade cloth.

The unique features of the present invention include:

- an adjustable pressure fit clip that can secure a panel having a thickness between 0.2mm to 10mm.
- all aluminium rivets - no corrosion from dissimilar metals
- Pre-treated Aluminium components to further reduce corrosion.
- available in sizes made to measure
- Purposefully designed to hold a panel and fly/midge/shade cloth or mesh.

The decoview extrusion system is one of the strongest and most advanced solutions for decorative laser cut security screens.

The Decoview extrusion system has a unique clamping system that can hold any panel up to 10 mm thick to create beautiful artistically designed decorative laser cut security screens for doors and windows.

Using the latest in CNC laser cutting and Punching technology means that Decoview
5 can customise, create, and produce locally one of the most amazing and creative security doors.

Decoview doors are made of a common material – aluminium, there is no risk of galvanic or electrolysis corrosion between the frames, fasteners and the panel caused by the use of dissimilar metals.

10 By preventing corrosion, these doors have the chance to last a lifetime. Decoview security doors are pre-treated in accordance with Australian Standards AS4506 and AS3715.

Decoview doors are so versatile, they can be used to create a statement piece on any front door, some privacy from a busy street frontage or security all of these
15 possibilities all while providing aesthetic appearance with a door that looks like a work of art.

The Decoview system provides advantageous features as follows:

- Flyscreen groove –industry standard flymesh and midge mesh
- strong 6063 T6 Aluminium
- 20 • pre-treated after lengths are cut for assembly, this means no untreated mill finish or exposed edges
- unique clip and rivet system is sturdy and provides double strength

- Heavy duty and architecturally designed section frames laser cut screens beautifully
- Manufactured to exceed the AS5039-2008 standards to ensure your property is secure

5

Throughout this specification the word “comprise”, or variations such as “comprises” or “comprising”, will be understood to imply the inclusion of a stated element, integer or step, or group of elements, integers or steps, but not the exclusion of any other element, integer or step, or group of elements, integers or steps.

- 10 The use of the expression “at least” or “at least one” suggests the use of one or more elements or mixtures or quantities, as the use may be in the embodiment of the disclosure to achieve one or more of the desired objects or results.

Any discussion of documents, acts, materials, devices, articles or the like that has been included in this specification is solely for the purpose of providing a context for
15 the disclosure. It is not to be taken as an admission that any or all of these matters form part of the prior art base or were common general knowledge in the field relevant to the disclosure, as it existed anywhere before the priority date of this application.

The systems and methods are not limited to the specific embodiments described
20 herein. In addition, components of each system and each method can be practiced independently and separately from other components and methods described herein. Each component and method can be used in combination with other components and other methods.

While considerable emphasis has been placed herein on the specific features of the preferred embodiment, it will be appreciated that many additional features can be added and that many changes can be made in the preferred embodiment without departing from the principles of the invention. These and other changes in the preferred embodiment of the invention will be apparent to those skilled in the art from the disclosure herein, whereby it is to be distinctly understood that the foregoing descriptive matter is to be interpreted merely as illustrative of the invention and not as a limitation.

Legend

- | | |
|----|---|
| 10 | 1 Variant Main Frame |
| | 2 Channel |
| | 3 Teeth |
| | 4 Supporting Bed |
| | 5 Channel Teeth |
| 15 | 6 Spline Channel |
| | 7 Teeth |
| | 8 Spring |
| | 9 Clamping Arm |
| | 10 Teeth |
| 20 | 11 Legs |
| | 12 Decorative Aluminum Profile Cut Panel |
| | 13 Decorative Aluminum Perforated Panel |
| | 14 Detailed View of Decorative Aluminium Perforated Panel |
| | 15 Spline |
| 25 | 16 Flyscreen Mesh |
| | 17 INTERLOCKING CLAMPTING CLIP (ICC) |
| | 18 Decorative panel |
| | 19 Assembled Decorative Screen |
| | 20 8mm Panel |

- 21 3mm Panel
- 22 1mm Panel
- 23 Front View
- 24 Industry standard Door Handle
- 5 25 Rear Isometric View & Exploded View of Corner Illustrating ICC Channel for Securing Spline & Fly/Midge Mesh
- 26 Front View
- 27 Rear View – Isometric
- 28 Exploded View of Corner
- 10 29 View of Window Screen Assembly
- 30 Exploded View of Window Screen Assembly
- 31 Example of Variant Window Frame
- 32 Industry Corner Stake

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Claims

The claims defining the invention are as follows:

Claim 1

5 A security or barrier screen assembly comprising:

- (i) A panel;
- (ii) a main frame including a recessed elongated channel; top inner section of the main frame includes a first elongated clamping bed; and
- 10 (iii) an interlocking clamping clip including a clamping arm not integrally formed with the main frame; wherein the channel is adapted to receive the clip and applying pressure to same clip engages the frame so as to secure the panel in between the arm and the bed.

Claim 2

15 The assembly according to claim 1 wherein the clip is adapted to house the panel from 0.2 to 10mm thick.

Claim 3

The assembly according to claims wherein the screen is a decorative security screen designed to fit a door or window.

20

Claim 4

The assembly according to claims wherein the frame can accommodate fly or midge mesh or shade cloth.

Claim 5

25 The assembly according to any one of claims 1 to 4 further comprising a fly screen spline channel for securing an optional fly screen mesh or shade cloth.

Claim 6

30 The assembly according to claim 1 wherein the screen is a security screen.

Claim 7

The assembly according to any one of claims 1 to 6 wherein the security door and window extrusion frame houses an aluminium profile cut or perforated panel.

Claim 8

The assembly according to any one of claims 1 to 6 wherein the screen is an aluminium profile cut, generally laser/router or plasma cut, motif or perforated design held by the aluminium extrusion security door or window frame.

5

Claim 9

The assembly according to any one of claims 1 to 8 wherein the recessed channel and the arm and bed comprise grooves or teeth which, when engaged, secure the panel.

10 **Claim 10**

The assembly according to any one of claims 1 to 9 wherein the grooves or teeth enable adjustment of the panel width at 0.5mm intervals.

Claim 11

15 The assembly according to any one of claims 1 to 10 wherein the recessed channel is substantially U shaped.

Claim 12

The assembly according to claims 1 to 11 wherein the Clamping Clip locks into place via a spring action.

20 **Claim 13**

The assembly according to any one of claims 1 to 12 wherein the clip when assembled with the main frame, automatically self-adjusts to accommodate various thickness panels.

Claim 14

25 A method of securing a panel using the assembly and clamping clip as defined in any one of claims 1 to 13.

Claim 15

30 A method of securing a decorative aluminium profile cut or perforated aluminium panel into a security door or window frame according to any one of claims 1 to 13 wherein a profile cut is generally laser cut, router cut or plasma cut.

Claim 16

The method according to any one of claims 14 or 15 wherein fastening of the panel requires pressure fitting of the adjustable clip inserted into the frame resulting in mechanical clamping and fastening of a panel in the screen.

5 **Claim 17**

A security or barrier screen assembly comprising:

- (i) A panel;
- (ii) a main frame including a recessed elongated channel; the top inner section of the main frame includes an elongated clamping bed; and
- 10 (iii) an interlocking clamping clip including an elongated clamping arm; wherein the channel is adapted to receive the clip and applying pressure to same clip engages the frame so as to secure the panel in between the arm and the bed.

15 **Claim 18**

The assembly according to claim 17 wherein the clip when assembled with the main frame, automatically self-adjusts to accommodate various thickness panels.

Claim 19

- 20 The assembly according to any one of claims 17 or 18 further comprising a fly screen spline channel for securing an optional fly screen mesh or shade cloth.

Claim 20

The assembly according to claims 17 to 19 wherein the Clamping Clip locks into place via a spring action.

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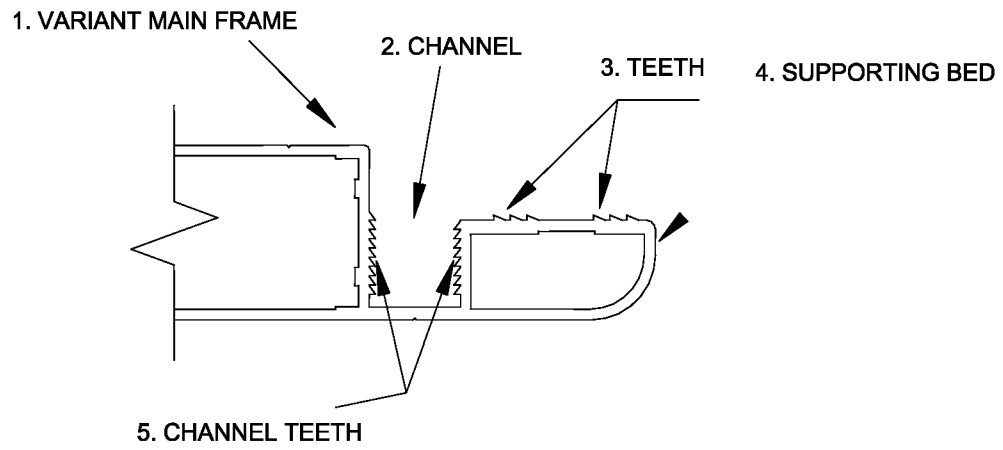


FIGURE. 1

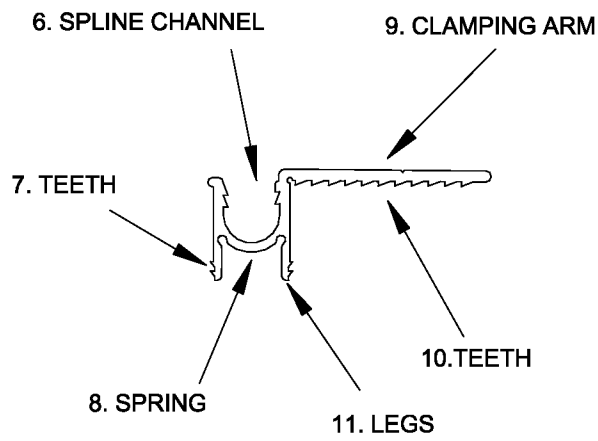
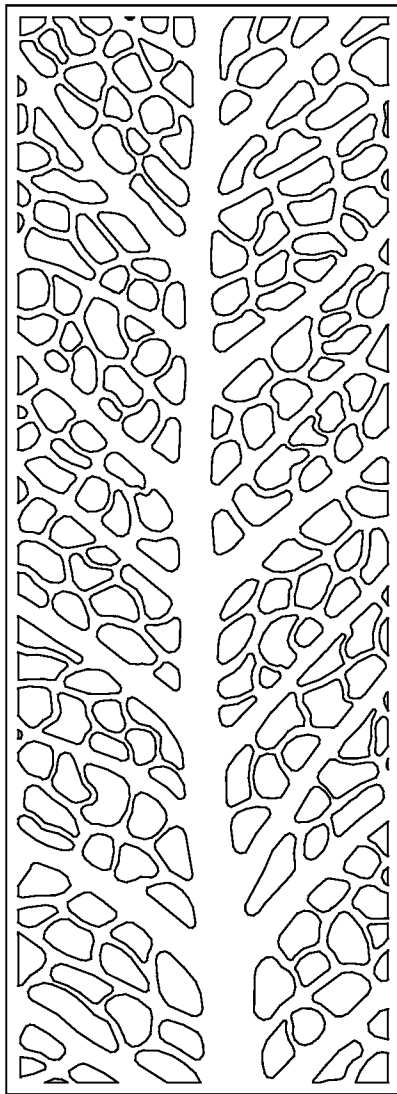
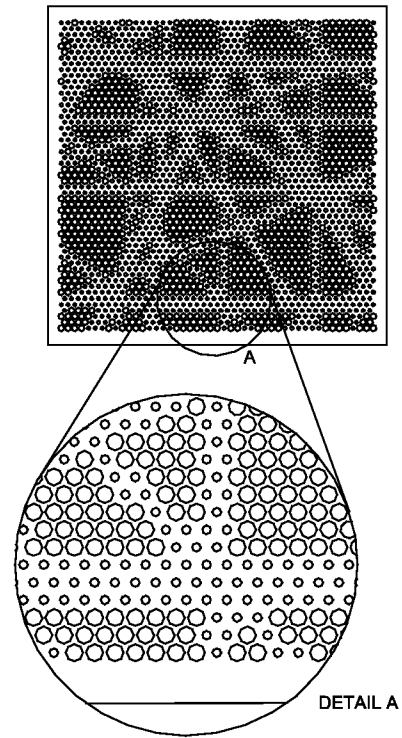


FIGURE. 2

12.



13.

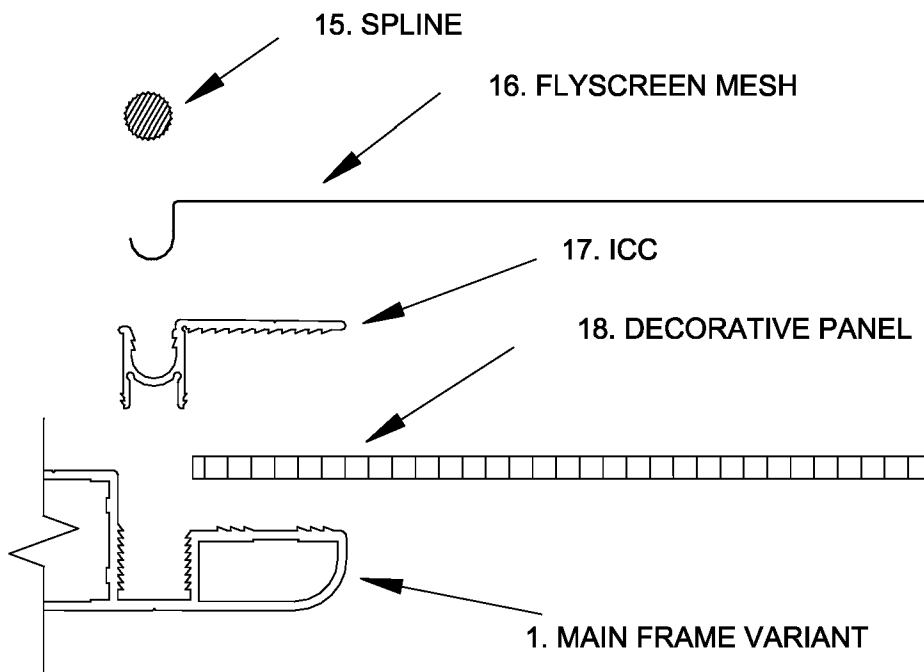


14.

FIGURE. 3

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Exploded Cross Section of Frame & Panel Assembly



Assembled Cross Section of Frame & Panel

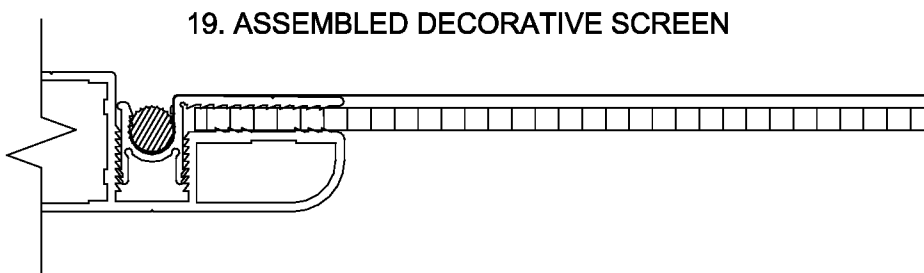


FIGURE. 4

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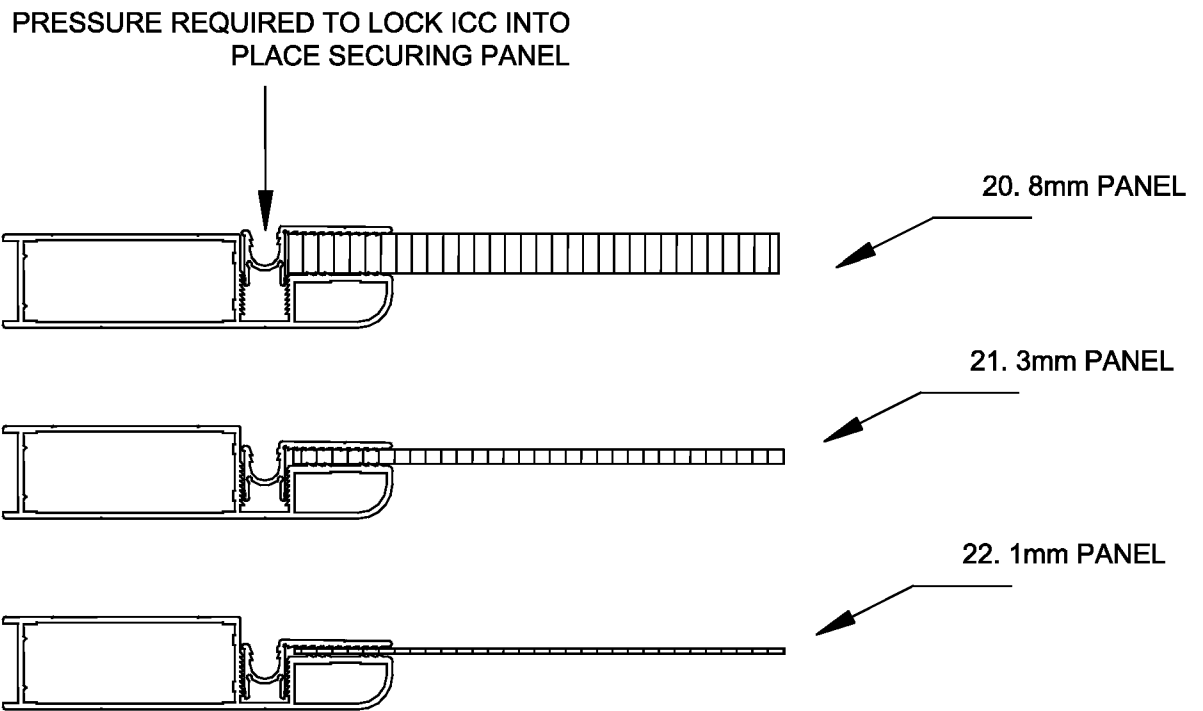


FIGURE. 5

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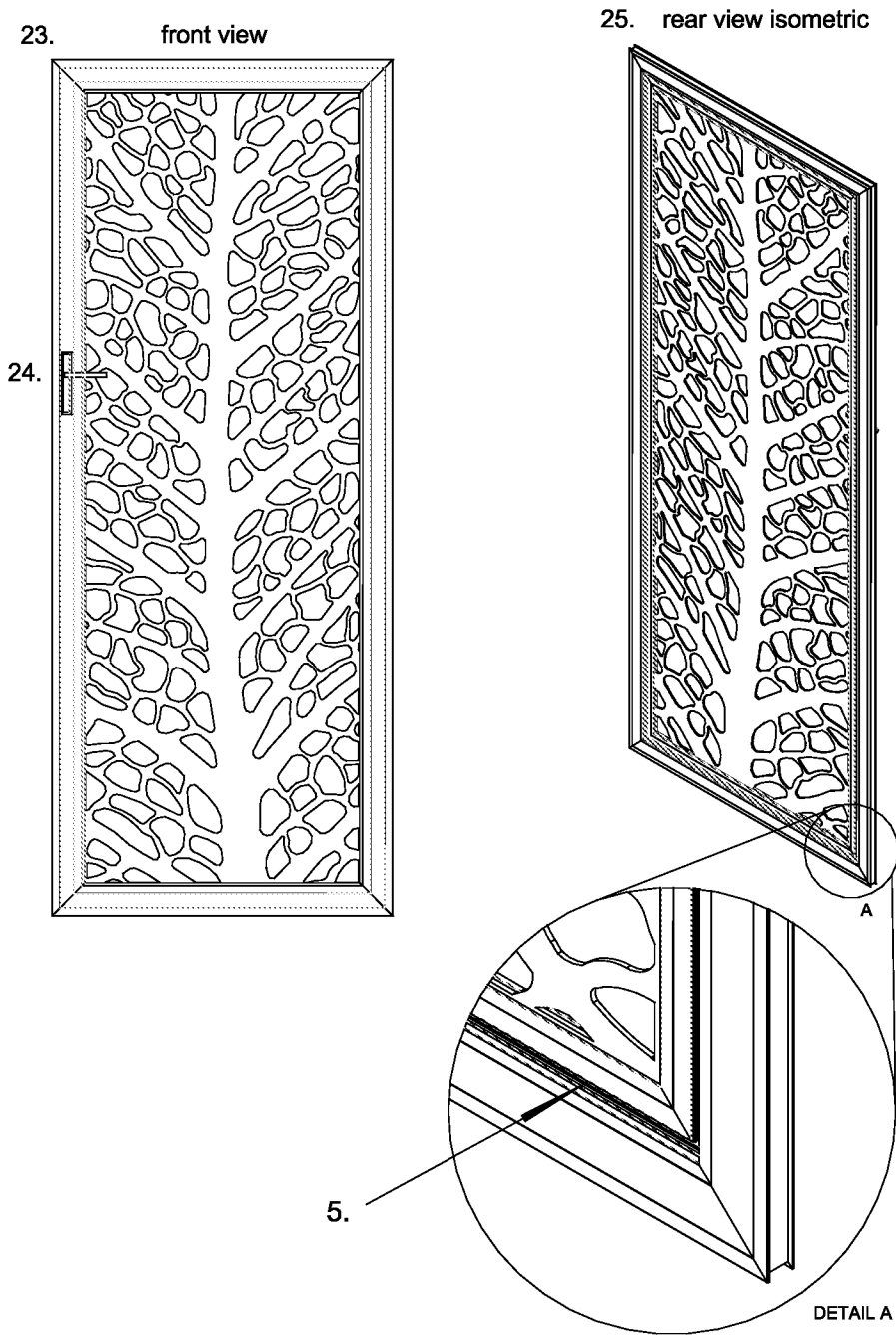


FIGURE. 6

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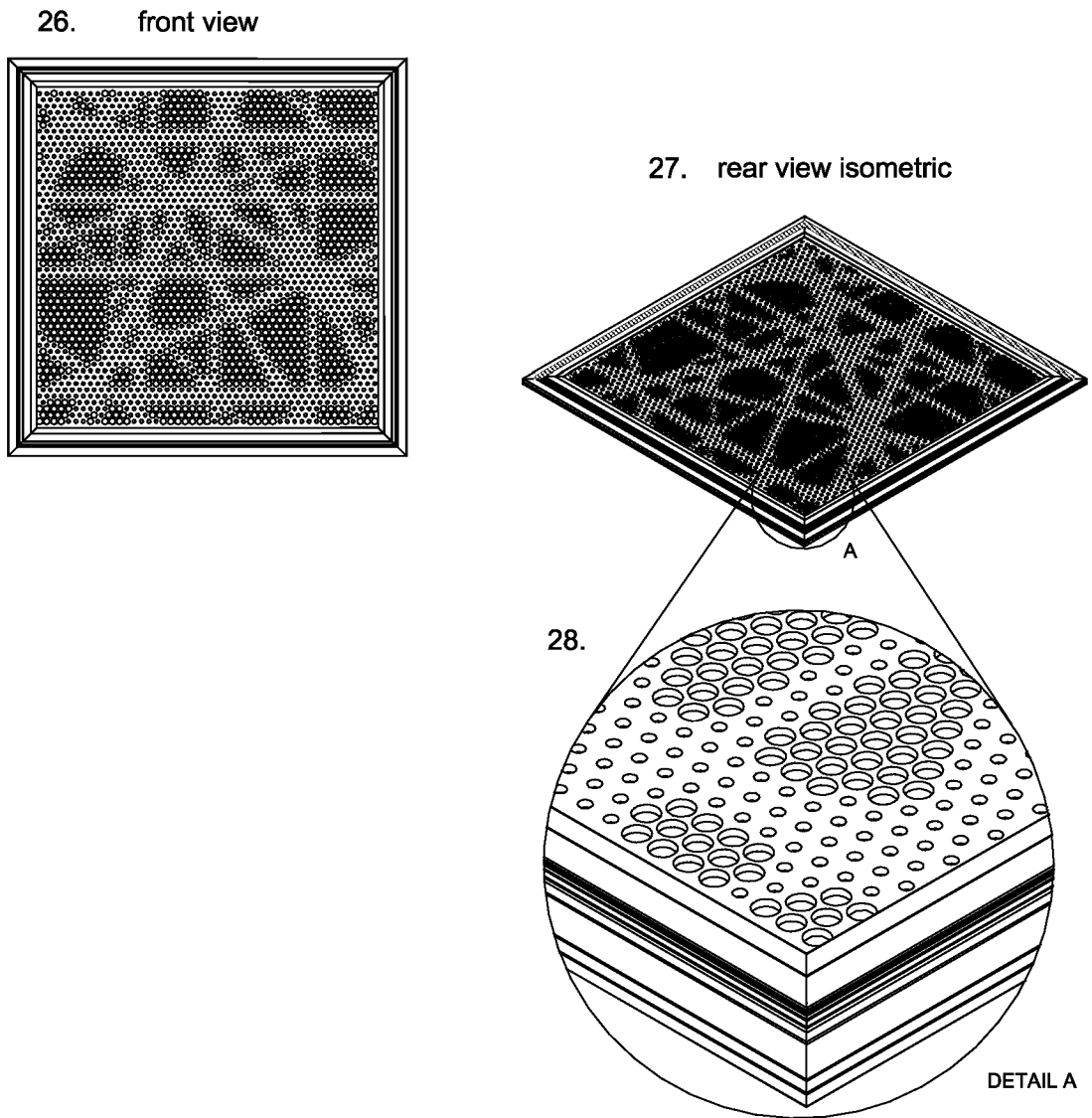


FIGURE. 7

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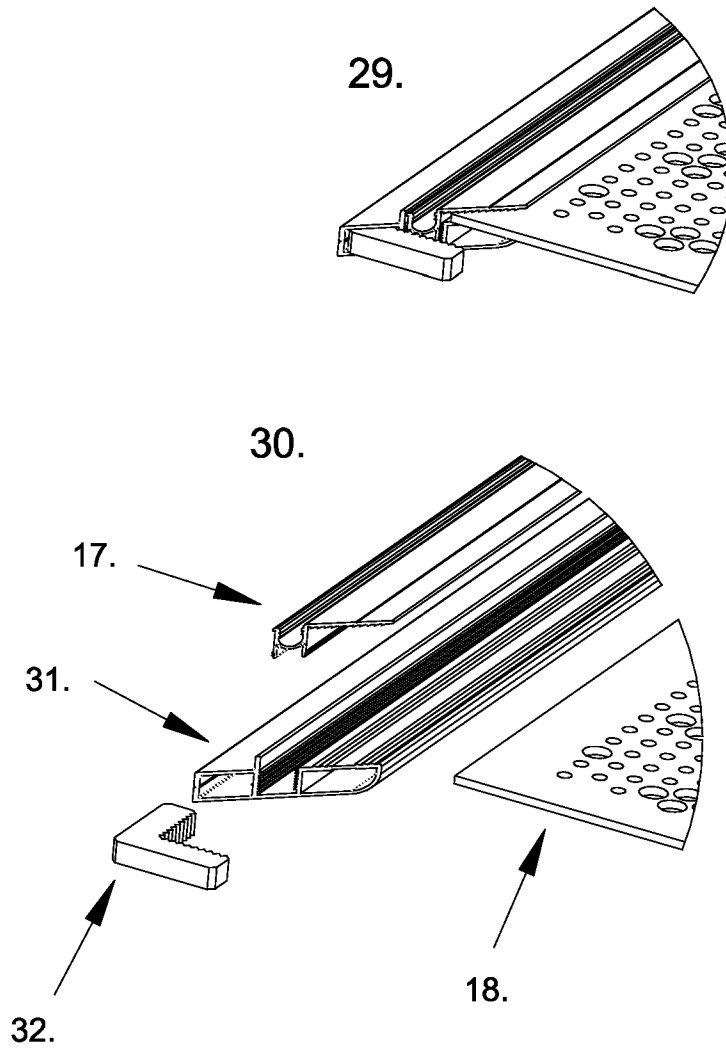


FIGURE. 8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2017/050875

A. CLASSIFICATION OF SUBJECT MATTER

E06B 5/11 (2006.01) E06B 9/24 (2006.01) E06B 9/52 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Database used: PATENW (EPODOC, WPIAP, English full text), Espacenet, Google and AusPatIPC/CPC marks used: E06B5/10, E06B5/11/low, E06B9/-, E06B9/24/low, E06B9/52/low, E06B2009/527, E06B2009/015, F16B2/lowKeywords used: security, clip, panel, channel and the like terms.

Applicant/inventor name search carried out on Espacenet, AusPat and internal databases provided by IP Australia.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

 Further documents are listed in the continuation of Box C See patent family annex

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
1 November 2017Date of mailing of the international search report
01 November 2017

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INTERNATIONAL SEARCH REPORT

International application No.

C (Continuation).

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X	AU 2006100242 A4 (MOONBUSH PTY LTD) 27 April 2006 Abstract; Figs.1-6; page 7 lines 1-5	1-20
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2017/050875

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End of Annex