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A FASTENING ASSEMBLY

Abstract

There is schematically depicted herein a fastening assembly (1) to secure a sheet of material (3) to a frame (5). The assembly (1) includes a housing (7) having a first member (9) extending from the frame (5) to define a recess (10). A second member (11) is operatively associated with the first member (9) to provide for the capture of the sheet (3) between the first and second members (9, 11). A cushioning member (14) of material more resilient than the housing (7) is located in use between the first and second members (9, 11) to provide for cushioning or flex of the sheet (3) when fastened to the frame (5) and impacted by an object.

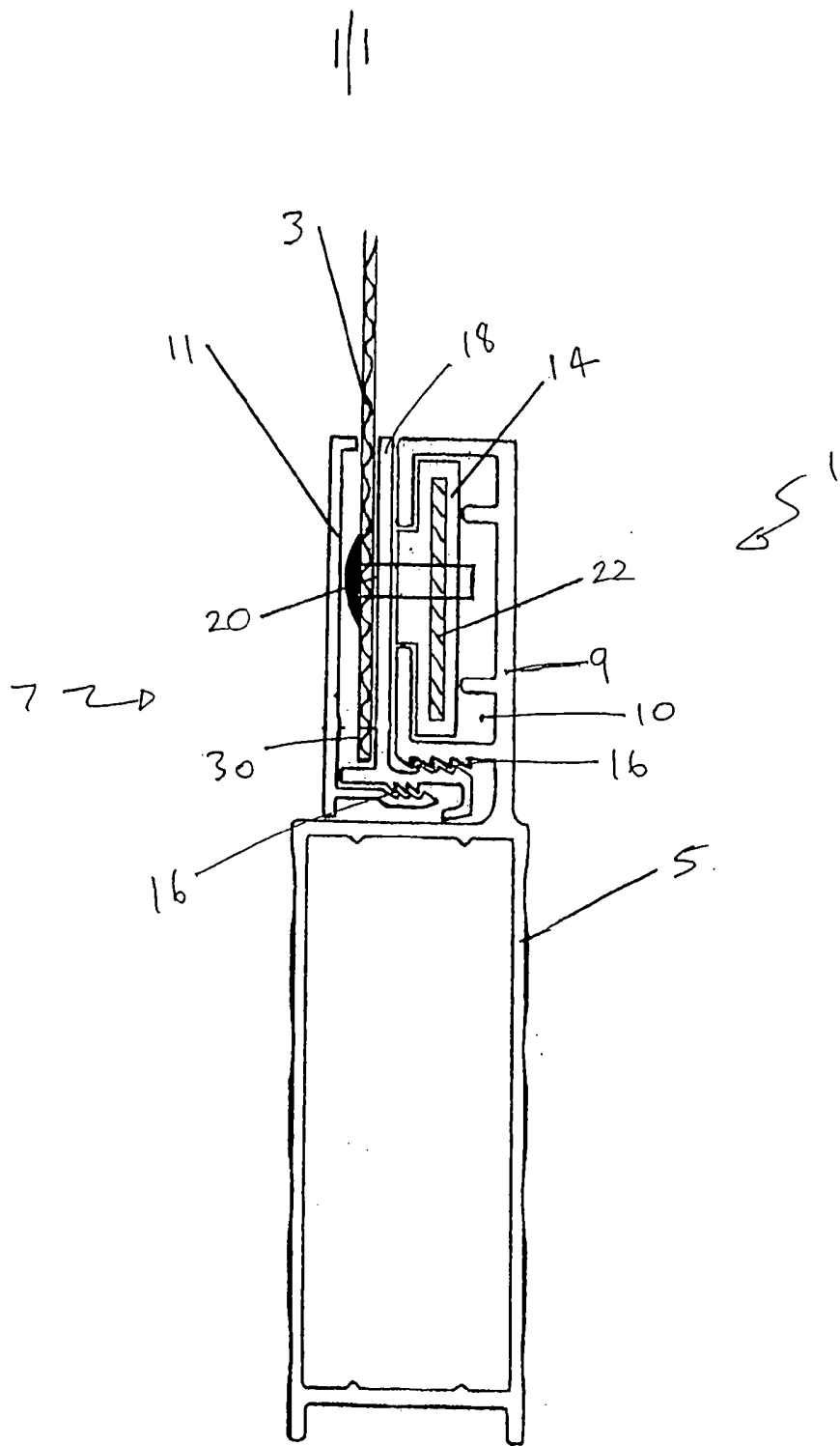


FIG 1

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COMPLETE SPECIFICATION

FOR A STANDARD PATENT

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The following statement is a full description of this invention, including the best method of performing it known to me/us:

A FASTENING ASSEMBLY

Field of the Invention

The present invention relates to a fastening assembly and in particular to an assembly to fasten a screen, sheet, panel or the like to a frame.

Background of the Invention

5 Frames support many different types of generally flat longitudinally extending structures such as screens, mesh, sheets, panels or the like. For example, art, glass, fly screens and security screens are all examples of sheets retained within a frame. The sheet can be of any material and solid or resilient. Typically, the frame should hold the sheet secure and tight. This "tightness" causes problems when the sheet is subject to an impact load, for example, from an object such as a ball or the like hitting the sheet. If the sheet is secured too tightly within the frame then the sheet may break. Existing fastening assemblies are designed for a tight rigid fasten. Such a tight fasten can also lead over time to the threads of the fasteners being stripped or worn away rendering the fastening is assembly inoperable.

15 Further, existing fastening assemblies provide little, if any, resistance to electrolysis. With so many metal parts electrolysis is a major problem. Also, the existing assemblies provide little ergonomic design with the fasteners being exposed to view.

20 Accordingly, there is a need for a fastening assembly which provides cushion and flex to the sheet when impacted along with reducing electrolysis and providing an ergonomic design. Further, as many techniques for installing sheets in frames are complicated and expensive there is also a need for a simpler and cheaper method of installation.

Object of the Invention

25 It is an object of the present invention to substantially overcome or at least ameliorate one or more of the disadvantages of the prior art, or to at least provide a useful alternative.

Summary of the Invention

There is disclosed herein a security screen assembly comprising:

a frame comprising a panel portion, and a fastening assembly associated with the panel portion, the fastening assembly for securing a sheet of material to the frame, said fastening assembly including:

a first member extending from the frame and comprising a pair of arms defining a housing defining a recess,

a channel formed between one of the arms of the first member and the panel portion of the frame;

a securing member having a foot which extends into the channel towards the first member, wherein said foot and engages with the arm of the first member that defines the channel to substantially prevent movement of the securing member in a direction substantially perpendicular to a longitudinal axis of the frame;

a sheet of material sandwiched in the assembly; and a cushioning member housed in the recess defined by the first member, the cushioning member being made of material more resilient than said housing,

wherein the assembly is fastened together by fasteners having bodies which pass through the securing member and the sheet of material and into the cushioning member.

Preferably, said first and cover members include a plurality of complementary gripping members to provide for locking engagement between said first and cover members.

Preferably, said gripping members include serrations.

Preferably, including a securing member locatable between said first and cover members, said securing member to position a portion of said sheet of material in a generally flat orientation between said first and cover members.

Preferably, said securing member includes a plurality of gripping members adapted to engage the first member, cover member or both.

Preferably, said securing member includes a portion to inhibit said sheet from contacting said frame to reduce electrolysis in said assembly.

Preferably, said fastener is a bolt or screw.

Preferably, including a plate to be located within said recess to capture said bolt or screw.

Preferably, said plate is located within said cushioning member.

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Brief Description of the Drawing

A preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawing, wherein:

Figure 1 is a cross-sectional view of an embodiment of the invention.

Detailed Description of the Preferred Embodiments

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There is schematically depicted herein a fastening assembly 1 to secure a sheet of material 3 to a frame 5. The sheet 3 and frame 5 can be any typical sheet 3 and frame 5. The assembly 1 includes a housing 7 having a first member 9 extending from the frame 5 to define a recess 10. In the preferred form the recess is of a "C" shape. A cover member 11 is operatively associated with the first member 9 to provide for the capture of the sheet 3 between the first and cover members 9, 11. A cushioning member 14 of material more resilient than the housing 7 is located in use between the first and cover members 9, 11 to provide for cushioning or flex of the sheet 3 when fastened to the frame 5 and impacted by an object. The assembly 1 could include a cushioning block of appropriately shaped soft material or the like or longitudinally extending strips or the like of cushioning material. In Figure 1 a cushioning block is shown. The assembly 1 can further include a plurality of complimentary gripping members 16 on the first and cover members 9, 11 to provide a locking engagement between the first and cover members 9, 11 and to secure the sheet 3 within the housing 7. In the embodiment shown the gripping members 16 are serrations however could be any typical gripping formation such as cams, steps or the like. The assembly 1 could include one or more securing members 18 locatable between the first and cover members 9, 11 to assist with the fastening of the sheet 3 within the housing 7 and/or engagement between the first and cover members 9, 11. Securing member 18 also provides insulation from electrolysis occurring in the assembly 1 by restricting an end portion 30 of the sheet 3 from contacting the frame 5. The securing member 18 can

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also include a plurality of gripping formations 16 to engage the first 30 member 9, cover member 11 or both. The members 9, 11, 18 can be made of any suitable material such as PVC. The assembly 1 could further include a fastener 20 such as a bolt, screw, press stud or the like connected to a washer, metal strip or plate 22 located within the recess 10 to provide further fastening of the sheet 3 and securing member 18 to the housing 7. Cushioning member 14 provides shock absorbent and also insulation of the plate 22 from electrolysis. In Figure 1, the plate 22 is shown located within the cushioning member 14.

Referring to Figure 1, in use the cushioning member 14 is placed within the recess 10 and the securing member 18 secured to the first member 9 by way of serrations 16. A portion 30 of the sheet 3 is placed adjacent the securing member 18 and the fastener 20 secures the sheet 3 and securing member 18 to the first member 9 by way of the block 14 and plate 22. The cover member 11 is then placed over the sheet 3 and fastener 20 to provide an ergonomic look and lock the assembly 1 into position using serrations 16.

Advantageously, the present invention provides a simple to install fastening assembly 1 to lock a sheet of material 3 to a frame 5 that provides a cushioning effect or is flex when the sheet 3 is under impact, such as, from a ball, object or the like. As the first and cover members 9, 11 lock together they provide an ergonomic look where no parts are exposed. The use of the securing member 18 along with first and cover members 9, 11 inhibits electrolysis occurring in the assembly 1 by keeping the sheet 3 at a distance from the frame 5.

Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms.

It is to be understood that, if any prior art publication is referred to herein, such reference does not constitute an admission that the publication forms a part of the common general knowledge in the art, in Australia or any other country. In the claims which follow and in the preceding description of the invention, except where the context requires otherwise due to express language or necessary implication, the word "comprise" or variations such as "comprises" or "comprising" is used in an inclusive sense, i.e. to specify the presence of the stated features but not to preclude the presence or addition of further features in various embodiments of the invention.

The claims defining the invention are as follows:

1. A security screen assembly comprising:
a frame comprising a panel portion, and a fastening assembly associated with the panel portion, the fastening assembly for securing a sheet of material to the frame,
5 said fastening assembly including:
a first member extending from the frame and comprising a pair of arms defining a housing defining a recess,
a channel formed between one of the arms of the first member and the panel portion of the frame;
10 a securing member having a foot which extends into the channel and engages with the arm of the first member that defines the channel to substantially prevent movement of the securing member in a direction substantially perpendicular to a longitudinal axis of the frame;
a sheet of material sandwiched in the assembly; and
15 a cushioning member housed in the recess defined by the first member, the cushioning member being made of material more resilient than said housing, wherein the assembly is fastened together by fasteners having bodies which pass through the securing member and the sheet of material and into the cushioning member.
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2. The security screen assembly according to claim 1, wherein said arm of the first member and the securing member includes a plurality of complementary gripping members to provide for locking engagement between said first and securing members.
- 25 3. The security screen assembly according to claim 2, wherein said gripping members include serrations.
4. The security screen assembly according to any one of claims 1 to 3, including a cover member locatable over the sheet and fastener.
5. The security screen assembly according to claim 4, wherein said
30 securing member includes a plurality of gripping members adapted to engage the first member, cover member or both.

6. The security screen assembly according to claim 4 or 5, wherein said securing member includes a portion to inhibit said sheet from contacting said frame to reduce electrolysis in said assembly.

5 7. The security screen assembly according to any one of claims 1 to 6, wherein said fastener is a bolt or screw.

8. The security screen assembly according to any one of claims 1 to 7, including a plate to be located within said recess to capture said bolt or screw.

9. The security screen assembly according to claim 8, wherein said plate is located within said cushioning member.

10 10. A security screen assembly, substantially as herein described with reference to Figure 1 of the accompanying drawings.

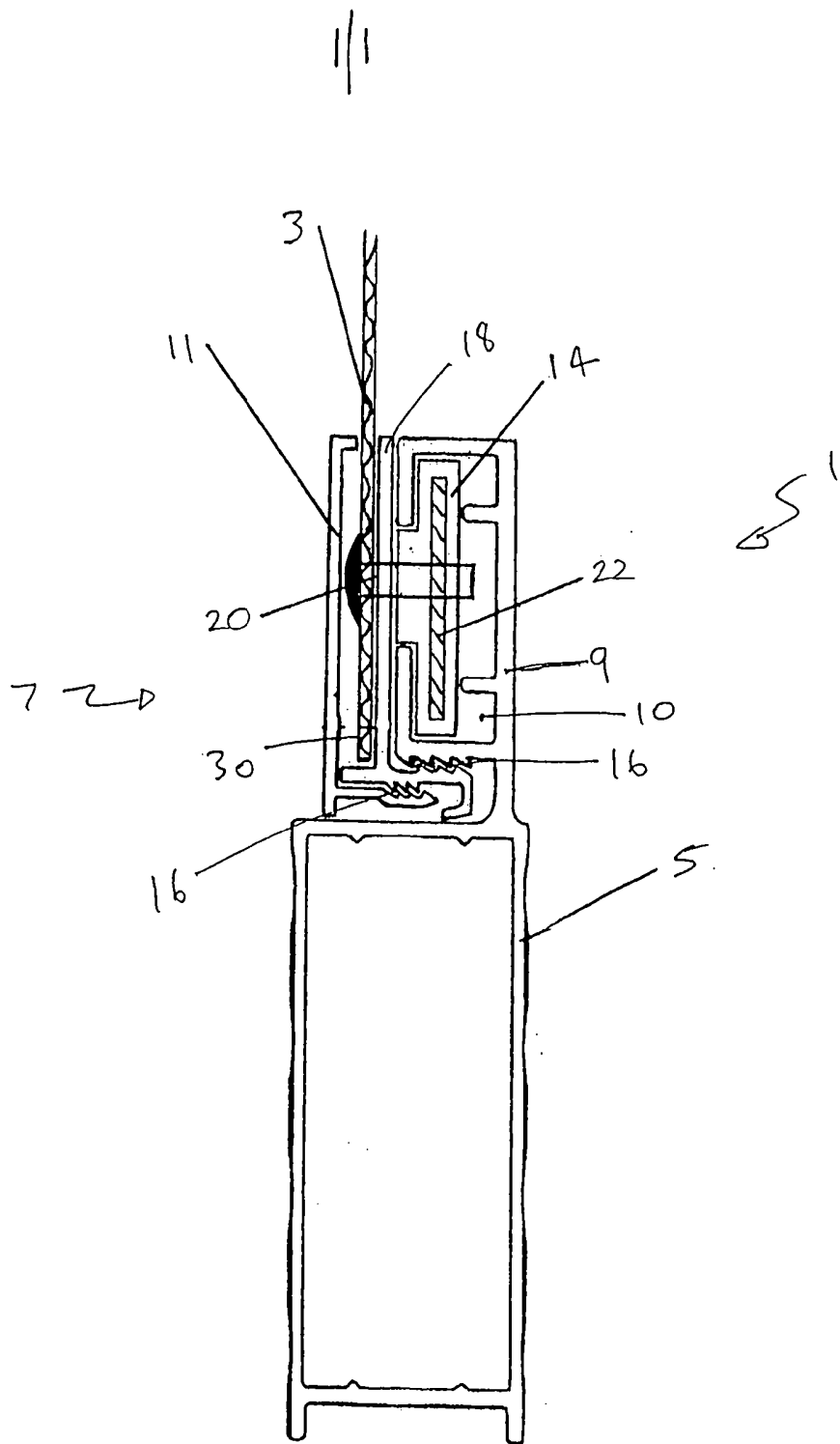


FIG 1