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(54) **Display poster fixing system**

(57) A display poster edging strip (10) is provided which comprises a longitudinal flange (14) adapted to be located in a longitudinal track, and a web (16) extending from the flange (14). The flange (14) has a thickness greater than the thickness of the web (16) and comprises natural fibrous materials. The web (16) comprises paper or card of natural fibrous materials and includes adhesive

means adapted to secure the web (16) to an edge of a paper display poster (40). The use of natural fibrous materials allows for recycling of the materials, and when the edging strip (10) is used with a paper display poster the edging strip and poster can be recycled together, since they contain minimal plastic or other non-natural materials.

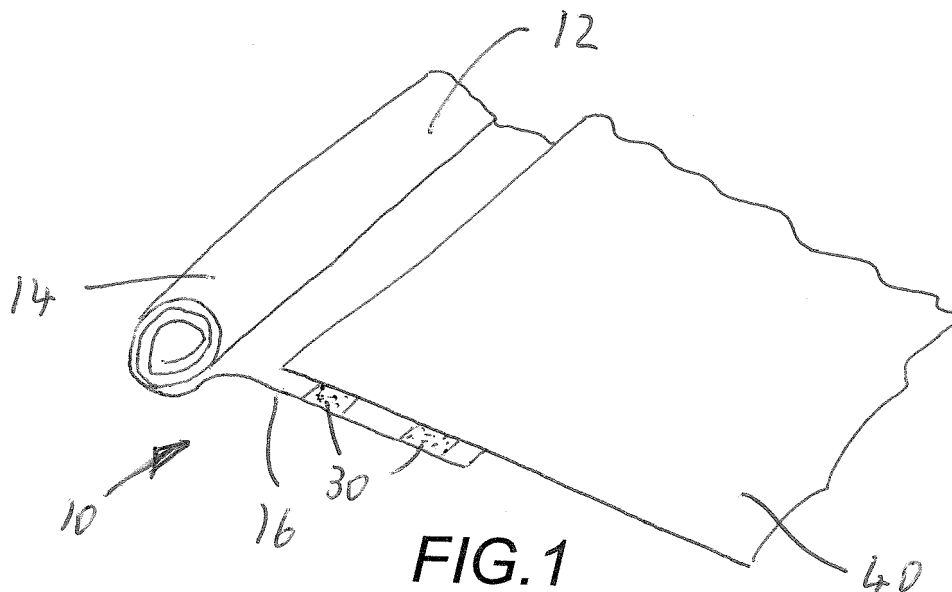


FIG. 1

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Description

[0001] The present invention is directed to an apparatus and method for fixing and displaying recyclable display posters at billboard sites or on walls or windows or in any other location, and in particular for fixing and displaying advertising posters in the form of a single sheet which is readily recyclable after use.

[0002] Conventional roadside advertising posters comprise a number of sheets, which are glued together in sequence on a billboard. For different billboards, different numbers of sheets are used, but these typically range from six sheets to ninety-six sheets; a ninety-six sheet panel is typically 13 metres in horizontal width.

[0003] When installed at conventional billboard sites, such posters are inconvenient and time-consuming to install, and require one or more persons with ladders (the top of the billboard may be 6 metres high, for example). It requires great skill to install the plurality of sheets while maintaining the desired overall effect of the poster, with adjacent sheets properly aligned. Also, when the poster needs to be changed, the original poster either has to be removed, or a new poster glued over it. When the old poster is removed, as it is covered in glue, it cannot be easily or fully recycled, and so often ends up in landfill sites. Although a new poster can be glued over an old poster, after a number of applications (typically 5 or 6) all the layers must be removed.

[0004] International Patent Application No PCT/GB2012/050681 discloses a billboard system in which a plastic display poster is mounted to a billboard frame by means of plastic display poster edging strips applied to the top and bottom edges of a display poster. The edging strips comprise a longitudinal core and a web extending therefrom. The longitudinal cores of the edging strips are located in longitudinal tracks provided in top and bottom rails of a billboard frame structure.

[0005] The display poster itself is a printed plastic sheet, for example of polyethylene or of coated woven polypropylene. When the poster is uninstalled the display poster edging strips, which are also of plastic, are removed from the edges of the display poster by peeling the display poster from the edging strip and the display poster itself can be sent for recycling, while the display poster edging strips can be re-used.

[0006] However this billboard system suffers from the disadvantage that it requires the step of removing the display poster edging strips from the display poster before the display poster edging strips and display poster can be recycled and/or re-used. Even if all the components are sent for recycling, they must be separated beforehand, because the cores of the display poster edging strips are of a different material to the display poster. Furthermore the display poster itself is more expensive than conventional paper display posters.

[0007] It is an aim of the present invention to obviate or mitigate one or more of the aforementioned disadvantages.

[0008] According to a first aspect of the present invention there is provided a display poster edging strip comprising:

- 5 a longitudinal flange adapted to be located in a longitudinal track, and
- a web extending from the flange,
- wherein the flange has a thickness greater than the thickness of the web,
- 10 wherein the web comprises paper or card of natural fibrous materials,
- wherein the flange comprises natural fibrous materials, and wherein the web includes adhesive means adapted to secure the web to an edge of a paper display poster.
- 15

[0009] The use of natural fibrous materials allows for recycling of the materials, and when the edging strip is used with a paper display poster the edging strip and poster can be recycled together, since they contain minimal plastic or other non-natural materials. The term "paper or card" encompasses paper or card-like materials which are predominantly made of wood pulp fibres or similar.

- 20
- 25 **[0010]** Preferably the edging strip comprises a keder strip.

- [0011]** The flange may comprise paper or card. The flange may comprise a core surrounded by paper or card. The core may comprise one or more of paper, card, hemp, sisal, string, wood, wool, cord or other fibrous material, or a mixture thereof.
- 30

- [0012]** Preferably the edging strip contains a sufficient proportion of natural materials by weight such that the edging strap may be recycled or reused with other paper products. Natural materials include paper, wood, plant products and animal products. The edging strip may contain at least a specific percentage of natural materials by weight, the specific percentage being selected from 60%, 70%, 80%, 85%, 90%, 95%, 98% or any other percentage as required by recycling authorities.
- 35
- 40

- [0013]** The adhesive means may comprise a contact adhesive material applied to one surface of the web, the contact adhesive material being covered by a release paper or other removable cover adapted to be removed before securing the web to an edge of a paper display poster.
- 45

- [0014]** Alternatively the adhesive means may comprise a heat activated adhesive material applied to one surface of the web. The heat activated adhesive material may be a film of a plastic material, for example polyethylene (PE) or polypropylene (PP). The heat activated adhesive material may be a coating adapted to permit adhesion under heating to a similar coating.
- 50

- [0015]** Alternatively the adhesive means may comprise a conventional glue or adhesive, adhesive tape, stitching, staples or other mechanical fasteners suitable to join a paper web to a paper sheet.
- 55

[0016] The web may comprise paper having a plastic

coating on one or both surfaces of the paper, for example polyethylene (PE) or polypropylene (PP). Such a coating may improve the weather resistance of the edging strip when it is used in an outdoors environment.

[0017] The plastic coating may be a heat activated coating adapted to permit adhesion under heating to a similar coating.

[0018] The flange may comprise a hollow tube comprising one or more layers of paper and/or card. The tube may be circular, square, rectangular or polygonal in cross section, or of any other suitable shape. The hollow tube may contain a core of natural fibrous materials. The core may be bonded to the tube or may be free to move longitudinally within the tube.

[0019] The flange may comprise a solid flange comprising several layers of paper and/or card folded onto each other. The flange may be circular, square, rectangular or polygonal in cross section. The flange may comprise one or more of paper, card, hemp, sisal, string, wood, wool, cord or other fibrous material, or a mixture thereof. The fibrous material may be bonded with one or more layers of paper and/or card. Such a construction may form a relatively stiff flange. Alternatively the fibrous material may be held loosely in an enclosure, for example a pocket or tube, formed of paper and/or card. Such a construction may form a relatively flexible flange which allows the display poster edging strip to be folded for transport purposes.

[0020] The web may comprise a single layer of paper and/or card extending from one side of the flange. Alternatively the web may comprise two layers of paper and/or card, each layer extending from one side of the flange. The two layers may be formed from a single sheet of paper and/or card. The flange may be formed separately from the web and then bonded to the web. The flange and web may be formed integrally.

[0021] According to a second aspect of the present invention there is provided a display poster of paper having a top edge, a bottom edge and opposing side edges, the display poster having a display poster edging strip according to the first aspect secured to at least one of the top edge, bottom edge and side edges.

[0022] Preferably the paper web of the display poster edging strip is secured directly to an edge region of the display poster, wherein the edge region comprises paper.

[0023] The edging strip may be secured to the edge region of the display poster by an adhesive provided on the edging strip, for example a contact adhesive material applied to one surface of the web, after removal of a release paper or other removable cover covering the contact adhesive.

[0024] Alternatively the edge region of the display poster may be coated with an adhesive means comprising a heat activated adhesive material applied to one surface of the display poster. The heat activated adhesive material may be a film of a plastic material, for example polyethylene (PE) or polypropylene (PP).

[0025] The heat activated adhesive material on the display poster may be a coating adapted to permit adhesion under heating to a similar coating provided on the web of the edging strip.

play poster may be a coating adapted to permit adhesion under heating to a similar coating provided on the web of the edging strip.

[0026] The coating may be applied locally in one or more edge regions of the display poster. Alternatively the coating may be applied to the entire display poster, or to a part thereof.

[0027] The heat activated coating or adhesive material on the web of the display poster edging strip may be the same material as the heat activated coating or adhesive material on the display poster.

[0028] Preferably the display poster edging strip extends substantially along the entire length of the edge of the display poster. The display poster edging strip may comprise a single uninterrupted display poster edging strip or a plurality of display poster edging strips arranged in substantially abutting end to end relationship. Preferably the display poster has a first display poster edging strip according to the first aspect secured to the top edge. In addition the display poster may have a second display poster edging strip according to the first aspect secured to the bottom edge. In addition the display poster may have third and fourth display poster edging strips according to the first aspect secured to the opposing side edges.

[0029] According to a third aspect of the present invention there is provided a method of installing a paper display poster having a top edge, a bottom edge and side edges on a support structure, the method comprising in a first stage:

securing a top rail to the support structure at an intended location of the top edge of the display poster, the top rail having a longitudinal track therein; and securing a plurality of second fasteners of mutually engageable fastening means to the support structure at an intended location of the bottom edge of the display poster; and the method comprising in a second stage:

securing a display poster edging strip comprising a longitudinal flange of natural fibrous material and a paper web extending therefrom to the top edge of the display poster by adhering the paper web to an edge area of the paper display poster;

securing a display poster edging strip comprising a longitudinal flange of natural fibrous material and a paper web extending therefrom to the bottom edge of the display poster by adhering the paper web to an edge area of the paper display poster;

locating the longitudinal flange of the edging strip at the top edge of the display poster in the longitudinal track of the top rail;

locating the longitudinal flange of the edging strip at the bottom edge of the display poster in a longitudinal track of a bottom rail;

tensioning the display poster by pulling the bot-

tom rail downwards; and attaching the bottom rail to the support structure by engaging a plurality of first fasteners of the mutually engageable fastening means provided on the bottom rail with the second fasteners secured on the support structure.

[0030] Preferably the method includes the following steps in the first stage:

securing a plurality of second fasteners of mutually engageable fastening means to the support structure at intended locations of the side edges of the display poster;
the method including the following steps in the second stage:

securing a display poster edging strip comprising a longitudinal flange of natural fibrous material and a paper web extending therefrom to each of the side edges of the display poster by adhering the paper web to an edge area of the paper display poster;
locating the longitudinal core of the edging strip comprising a longitudinal flange and a web extending therefrom at each of the side edges of the display poster in a longitudinal track in a corresponding side rail;
tensioning the display poster by pulling one or both of the side rails laterally; and attaching the side rails to the support structure by engaging a plurality of first fasteners of the mutually engageable fastening means provided on the side rails with the second fasteners secured on the support structure.

[0031] Preferably the edging strip is a display poster edging strip according to the first aspect of the invention. Preferably the steps of applying a display poster edging strip to the top, bottom and/or side edges of the display poster are carried out in factory conditions. The adhering steps may comprise heat welding.

[0032] According to a fourth aspect of the present invention there is provided a method of uninstalling a display poster installed according to the method of the third aspect of the invention, the method comprising the steps of:

releasing at least one of the bottom rail, and side rails if present, from the support structure by peeling apart the plurality of first fasteners of the mutually engageable fastening means provided on the bottom rail, and side rails if present, from the second fasteners secured on the support structure;
removing the longitudinal flange of the edging strip at the top edge of the display poster from the longitudinal track of the top rail;
removing the longitudinal flanges of the edging strips

at the bottom and side edges of the display poster from the longitudinal tracks in the bottom rail, and side rails if present; and
disposing of the display poster and display poster edging strips for recycling.

[0033] Preferred embodiments of the present invention will now be described by way of example only with reference to the accompanying drawings, in which:

Fig. 1 shows a display poster edging strip attached to a display poster according to the invention;
Fig. 2 shows a number of different embodiments of a display poster edging strip according to the invention;
Fig. 3 shows another embodiment of a display poster edging strip according to the invention;
Fig. 4 shows yet another embodiment of a display poster edging strip according to the invention;
Figs. 5 and 6 show steps in the method of using a display poster edging strip according to the invention in the installation of a display poster;
Fig. 7 shows a support structure forming part of an apparatus for installing a display poster according to the invention;
Fig. 8 is a sectional view through another support structure forming part of an apparatus for installing a display poster according to the invention;
Figs. 9 and 10 show steps in the method of installing a display poster according to the invention;
Fig. 11 shows a display poster with edging strip, side rails and bottom rails forming part of the apparatus of the invention; and
Fig. 12 is a partial sectional view showing the engagement of the edging strip of a display poster with a side rail of the apparatus of Fig. 11.

[0034] Referring to Fig. 1 there is shown an embodiment of a display poster edging strip according to the invention.

[0035] The recyclable edging strip 10 is made from a keder strip 12 comprising a longitudinal flange 14, which is adapted to be located in the longitudinal track 56 of a rail member 54 (seen in Fig. 8), and a web 16 extending from the flange 14. The flange 14 is formed of a tightly wound paper tube, although it may be formed of any other natural fibrous material, for example paper, card, hemp, sisal, string, wood, wool or cord. The flange 14 has a thickness greater than the thickness of the web 16. The thickness is measured perpendicular to the plane of the web 16.

[0036] The web 16 of the edging strip is typically paper, and is attached to the flange 14 either by forming the web 16 and flange 14 of a single sheet of paper (as shown in Fig. 1) or by wrapping the web 16 around a core 34, 36, 38 to form the flange 16 and bonding the web to itself and to the core, for example by pressing or adhesive bonding, as shown in Fig. 2(c), 2(e) or 2(f).

[0037] The web 16 includes adhesive means in the form of two adhesive strips 30 adapted to secure the web to the edge of a paper display poster 40. The web 16 may be of paper or card.

[0038] The flange 14 may comprise paper or card. The flange 14 may comprise a mixture of paper or card with a fibrous material such as hemp, sisal, string, wood, wool or cord. For example the flange may comprise a core of a wooden dowel or sisal cord, with paper wrapped around the core. The same paper can also form the web.

[0039] Preferably the edging strip contains at least a predetermined proportion of natural materials by weight, to meet environmental legislation to allow the edging strip to be recycled along with other paper waste. This proportion may be any proportion up to 100%, preferably at least 60%. Natural materials include paper, wood, plant products and animal products. This means that the edging strip can be recycled after use, since there are effectively no man-made materials in it which can prevent it being recycled economically.

[0040] The adhesive means in the example is two strips 30 of heat activated adhesive material applied to one surface of the web 16. The heat activated adhesive material is a film of a plastic material, for example polyethylene (PE) or polypropylene (PP). Alternatively the heat activated adhesive material may be provided as a single strip of a coating adapted to permit adhesion under heating to a similar coating. Alternatively the coating may be provided over the entire surface of one side of the web 16.

[0041] In the example of Fig. 3 the adhesive means is a contact adhesive 18, for example a double sided non-woven tape coated with solvent acrylic adhesive, applied directly in strip form to one surface of the web 16. A release paper 19 is provided on the adhesive 18 so that the adhesive is protected during handling of the edging strip. In the example of Fig. 4 the adhesive means comprises two strips of contact adhesive 18, each covered with a release paper 19. Any suitable double sided tape suitable for bonding paper to paper may be used. The total thickness, including the release paper, is typically less than 0.3 mm, typically about 0.15 mm.

[0042] Although not illustrated here, the adhesive means may instead comprise a conventional glue or adhesive, adhesive tape, stitching, staples or other mechanical fasteners suitable to join a paper web to a paper sheet.

[0043] In the example of Fig. 1 the flange 14 is a hollow tube comprising several more layers of paper and/or card. Although in the example of Fig. 1 the tube is circular, in variations the tube may be square, rectangular or polygonal in cross section, or any other shape.

[0044] Fig. 2 shows schematically possible variations of the core 14. In Fig. 2(a) the flange 14a is formed by winding the paper of the web 16 to form a solid coil.

[0045] In Fig. 2(b) the flange 14b is formed by winding the paper of the web 16 to form a hollow circular tube.

[0046] In Fig. 2(c) the flange 14c is formed by wrapping

the paper web 16 around a core comprising a cardboard tube 38 and fastening the edge 32 of the web to itself.

[0047] In Fig. 2(d) the flange 14d is formed by folding the paper web 16 on itself multiple times and bonding the web to itself by adhesive and/or high pressure and/or heat to form a thickened flange.

[0048] In Fig. 2(e) the flange 14e is formed by wrapping the paper web 16 around a solid core 34 which may be made of cardboard, paper, wood, rope or a matrix or mixture of fibrous material. The edge 32 of the web is then bonded to the web itself by adhesive and/or high pressure and/or heat. Although the core is illustrated with a rectangular cross section, the core can be of any shape.

[0049] In Fig. 2(f) the flange 14f is formed by wrapping the paper web 16 around a solid core 35 comprising a number of cords 36 of fibrous material, for example cotton, wool or paper fibre. The cords 36 may optionally be adhered to each other by an adhesive matrix (not shown). The web is then doubled back on itself and bonded to itself by adhesive and/or high pressure and/or heat to form a double thickness web. Any number of cords 36 may be used, including a single cord.

[0050] The shape of the flange 14 is not limited to the shapes shown in Figs. 1 and 2. Any shape which can serve as a key to engage in a track may be used. The flange 14 may comprise a solid flange comprising several layers of paper and/or card folded onto each other. The flange 14 may be formed separately, then bonded to the paper web 16, or it may be formed integrally with the paper web 16. The flange 14 may be circular, square, rectangular, polygonal or any other suitable shape in cross section. The flange 14 may comprise a mixture of paper or card with a fibrous material such as hemp, sisal, string, wood, wool or cord. The fibrous material may be bonded with one or more layers of paper and/or card. Such a construction may form a relatively stiff flange. Alternatively the core of fibrous material may be held loosely in an enclosure, for example a pocket or tube, formed of paper and/or card, such as in Fig. 2(e) or 2(f). Such a construction may form a relatively flexible flange which allows the display poster edging strip to be folded for transport purposes..

[0051] Fig. 3 shows schematically an alternative embodiment of an edging strip in which the paper web 16 is coated on both surfaces by a plastic coating 20A, 20B. The coating may be PE or PP or any other suitable coating which provides weather resistance to the paper web 16. The two coatings 20A may be the same or different. The coated paper 16 is wrapped around the string core 35 of several strands 36 of fibrous material and is sealed to itself by the application of heat, which melts the two coating layers 20A which are in contact with each other over length L sufficiently such that on removal of the heat the two coating layers are bonded to each other. It will be apparent that a machine can be arranged to feed the paper web 16 and the string core 35 through the machine, such that the paper web 16 is folded about the string core 35, and to apply heat and pressure to the folded web to

activate the plastic adhesive coating 20A, thereby forming the edging strip 10.

[0052] The external coating 20B serves to make the paper web 16 substantially waterproof, thereby extending the life of the edging strip when it is subject to rain or other moisture. The internal coating 20A also assists in making the paper web 16 waterproof, particularly in the area of the web below length L, where water can migrate around the display poster attached to the web 16 by the adhesive 18 in use.

[0053] Fig. 4 shows schematically another embodiment of an edging strip in which the paper web 16 is coated on one surface only by a plastic coating 20A. In other aspects the embodiment is the same as that of Fig. 3. This embodiment is useful where the waterproofing properties of the outer coating layer 20B are not required, for example for use in a building or dry environment.

[0054] Typically the coating 20A, 20B may be a polymer applied at a density of 10 to 30 g/m², preferably about 20 g/m². Typically the paper 16 has a weight of about 80 to 140 g/m², preferably about 110 g/m².

[0055] Although the web has been illustrated as a single or double layer of paper and/or card, it is to be understood that the web may comprise multiple layers of paper and/or card.

[0056] Edging strips 10 may be attached to a display poster 40, which is typically a printed paper sheet. Typically the edging strips are between 5 cm and 15 cm wide, preferably about 10 cm wide, but the invention is not limited to a particular width. In the described example edging strips 10 are applied to each of the top, bottom and side edges of the display poster, although in practice, where lateral tensioning of the display poster 40 is not required, or where weather conditions do not require restraint of the side edges, or where other methods of restraining the side edges are used, the edging strips 10 may be omitted from the side edges. Alternatively an edging strip may be applied only to the top edge of the display poster where the poster is to be simply suspended, or where other means of fixing the sides and bottom edge are provided.

[0057] In the illustrated example, once edging strips 10 have been applied to all four edges of the display poster 40, the display poster 40 is rolled around a spool 42, as shown in Fig. 5. The spool 42 may be a cardboard tube or similar, light enough so that the spool 42 with the display poster 40 wrapped around it can be lifted easily by one or two people. Ties 44 are then fastened around the wrapped display poster 40 and spool 42, as shown in Fig. 6, so that the display poster 40 can be transported to the location at which it is to be displayed. As can be seen in Fig. 6, the webs 16 of two adjacent edging strips 10 may overlap at a corner 46. This has no effect on the function of the edging strips, although the ends of the edging strips may instead be mitred, so that both edging strips lie flush on the display poster 40.

[0058] Referring now to Figs. 7 to 12 there is shown the apparatus for installing the display poster on a support

structure 50. The support structure 50 may be a conventional billboard of the type used for posting conventional paper posters. It can be a free standing flat board supported by legs 52 or it can be mounted on a building or other structure.

[0059] A top rail 54 is secured to the support structure 50 by screws or other suitable fastening means (not shown). Typically the top rail 54 is an extruded PVC section having a longitudinal track 56 formed therein, although other constructions are possible, e.g. aluminium or wood. The track 56 is a slotted track having an internal diameter slightly larger than the external diameter of the core 14 of the edging strip 10, so that the core can slide readily within the track 56.

[0060] At each lateral side of the support structure 50 is a side support strip 70 which is secured to the support structure 50 by screws or other suitable fastening means (not shown). Arranged along the side support strip 70 are a number of discrete fastening pads 74, which are the second fasteners 74 of a mutually engaging fastening means adapted to engage with first fasteners 94 provided on a side rail 90, as shown in Fig. 12. The mutually engaging fastening means 74, 94 are peelable and reengageable, for example mushroom headed fasteners such as 3M DualLock® or hook and loop fasteners, or any other fasteners which allow adjustment in relative position of the two fasteners. The second fasteners 74 may alternatively extend continuously along the side support strip 70, or may be applied directly to the support structure 50.

[0061] At the bottom of the support structure 50 is a bottom support strip 72 which is secured to the support structure 50 by screws or other suitable fastening means (not shown). Arranged along the bottom support strip 72 are a number of discrete fastening pads 76, which are the second fasteners 76 of a mutually engaging fastening means adapted to engage with first fasteners 64 provided on a bottom rail 60, as shown in Fig. 8. The mutually engaging fastening means 76, 64 are peelable and reengageable, for example mushroom headed fasteners such as 3M DualLock® or hook and loop fasteners, or any other fasteners which allow adjustment in relative position of the two fasteners. The second fasteners 64 may alternatively extend continuously along the bottom support strip 72, or may be applied directly to the support structure 50.

[0062] A suitable fastener is 3M DualLock® SJ3552, in a width of 25 mm. This allows up to 30 mm lateral adjustment on the positioning of each side rail 90 and up to 30 mm vertical adjustment on the positioning of the bottom rail 60 to allow adjustment of tension in the poster, as described below.

[0063] The apparatus includes two side rails 90 which are removably attachable to the support structure 50 by means of the mutually engaging fastening means 74, 94. The first fasteners 94 are shown as extending continuously along the side rail 90, but they may instead be provided as separate discrete fasteners which are aligned

to engage with the second fasteners 74 on the support structure 50. Typically each side rail 90 is an extruded PVC section having a longitudinal track 92 formed therein, although other constructions are possible, e.g. aluminium or wood. The track 92 is a slotted track having an internal diameter slightly larger than the external diameter of the core 14 of the edging strip 10, so that the core can slide readily within the track 92. Each side rail 90 is shown as being one piece, although it can be formed as two or more separate pieces which abut in use.

[0064] The apparatus also includes one or more bottom rails 90 which are removably attachable to the support structure 50 by means of the mutually engaging fastening means 64, 76. The first fasteners 64 are shown as extending continuously along each bottom rail 90, but they may instead be provided as separate discrete fasteners which are aligned to engage with the second fasteners 76 on the support structure 50. Typically each bottom rail 60 is an extruded PVC section having a longitudinal track 62 formed therein, although other constructions are possible, e.g. aluminium or wood. The track 62 is a slotted track having an internal diameter slightly larger than the external diameter of the core 14 of the edging strip 10, so that the core can slide readily within the track 62. In the illustrated embodiment there are shown two bottom rails which abut with each when fixed to the support structure 50, although the bottom rail can be formed as a single piece or as three or more separate pieces which abut in use.

[0065] The support structure may comprise frame members 82 which extend around the perimeter of the support structure, shown in Fig. 8 but omitted from Fig. 7 for clarity. The frame members 82 may be supported from spacing members 80 fixed to the support structure. Typically the frame members 82 at least partially cover the top rail, bottom rail and side rails in use when the bottom rail and side rails are attached to the support structure. This creates the effect of a single solid frame to the display poster where it is required.

[0066] The display poster 40 itself is a printed paper sheet. No finishing of the edges of the display poster 40 is required before attachment to the edging strip 10, and it may have simple cut edges.

[0067] In use, in a first stage a poster site is prepared prior to installing the display poster by securing a top rail 54 to the support structure 50 at an intended location of the top edge of the display poster 40, securing a plurality of second fasteners 76 of mutually engageable fastening means to the support structure at an intended location of the bottom edge of the display poster 50, preferably by securing the bottom support strip 72 to the support structure, and securing a plurality of second fasteners 74 of mutually engageable fastening means to the support structure 50 at intended locations of the side edges of the display poster 50, preferably by securing the side support strips 74 to the support structure. The positions of the bottom and side support strips are selected to suit the intended size of display poster. The apparatus of the

invention can be fixed to an existing poster site or to a new poster site.

[0068] In a second stage the edging strips 10 are applied to the edges of the display poster 40 as previously described. The poster 40 on its spool 42 is then held vertically adjacent to one of the side support strips 70 on the support structure 50, and the longitudinal core 14 of the edging strip 10 at the top edge of the display poster 40 is threaded into the longitudinal track 56 of the top rail 54. For a large poster, this can readily be done by a first operative on a ladder while second operative holds up the spool 42 and poster 40, as shown in Fig. 9. For a small poster this can be done by one person. Once the flange 14 is engaged in the longitudinal track 56 of the top rail 54, the first operative can descend the ladder and pull the poster 40 across the support structure 50, while the second operative continues to hold the spool 42 while allowing the spool to rotate as the poster 40 unwinds, as shown in Fig. 10.

[0069] Once the display poster 40 is fully unwound, so that it extends along the length of the top rail 54 and is suspended from the top rail 54, the spool 42 can be put away. The longitudinal flange 14 of the edging strip 10 at the bottom edge of the display poster 40 is then engaged in the longitudinal track 62 of the one or more bottom rails 60. The display poster 40 is then tensioned vertically by pulling the bottom rail 60 downwards, and the bottom rail 60 is attached to the support structure by engaging the first fasteners 64 on the bottom rail 60 with the second fasteners 76 on the support structure 50, while continuing to hold the poster 40 in vertical tension. The engagement of the mushroom headed fasteners 64, 76 requires only hand pressure on the bottom rail 60, and even if a frame 82 covers the bottom rail 60 as shown in Fig. 8, an operative can reach inside and provide sufficient hand pressure to engage the fasteners 64, 76.

[0070] The longitudinal flange 14 of the edging strip 10 at each side edge of the display poster is then engaged in the longitudinal track 92 of the corresponding side rail 70. One of the side rails is fixed to the support structure by engaging the first fasteners 94 on the side rail 90 with the second fasteners 74 on the support structure 50. The display poster 40 is then tensioned horizontally by pulling the other side rail 90 laterally, and the other side rail is attached to the support structure 50 by engaging the first fasteners 94 on the side rail 90 with the second fasteners 74 on the support structure, while continuing to hold the poster 40 in horizontal tension.

[0071] To uninstall the poster, the operation is reversed. The bottom rail 60 and side rails 90 are first released from the support structure by peeling apart the first 64, 94 and second fasteners 76, 74 of the mutually engageable fastening means. This can be done by hand. The bottom rail 60 and side rails 90 are then removed by sliding them from the longitudinal flanges 14 of the edging strips 10 at the bottom and side edges of the display poster 40. The whole display poster, which is now suspended from the top rail 54, can now be removed by

pulling sideways on the poster 40 so that the longitudinal flange 14 of the edging strip 10 at the top edge of the display poster 40 slides out of the track 56 in the top rail 54.

[0072] The display poster can then be disposed of for recycling. There is no need to remove the edging strips 10 from the display poster 40. A new display poster can be installed as described above.

[0073] The first stage of installation, namely applying the edging strips 10 to the display poster 40, can be carried out in factory conditions, and the display poster 40 can be rolled up or folded for simple and quick installation on site. Site installation of large posters can be carried out by two operatives with one ladder. If a means is provided to support the spool 42 while the top core 12 is threaded into the top rail 54, installation can be carried out by one operative using one ladder. Site installation of small posters can be carried out by one operative.

[0074] The top rail 54, bottom rail 60 and side rails 90 provide an attractive framing system, which needs no further framing. However the invention can be used on an existing billboard structure which already has a frame 82 if the space behind the frame permits. The system can be used on any existing support structure which has a flat surface of sufficient dimensions. The use of adjustable mutually engaging fastening means allows simple adjustment of the tension in the poster, both vertically and horizontally, so that small discrepancies in poster size can be accommodated while still allowing the poster to be tensioned.

[0075] The side rails 90 and side support strips 70 can be omitted if required. The side rails 90 and bottom rail 60 can be continuous or discontinuous, abutting or spaced apart.

[0076] The display poster can be any suitable size. For example, small display posters, as small as 1000 mm high or less and 600 mm wide or less, may be used on internal or external walls. The top rail 54, side support strips 70 and bottom support strip 72 can be fixed directly to the wall, so that the wall becomes the support structure 50. Alternatively the top rail 54, side support strips 70 and bottom support strip 72 can be fixed to a separate panel which forms the support structure 50, and the panel can be fixed to the wall.

[0077] The present invention provides a low cost means of mounting a billboard poster, using low cost materials, namely paper for the display poster and paper, card or other natural fibrous material for the display poster edging strips. Once the display poster edging strips have been secured to the display poster, it is not necessary to separate them again before disposing of the display poster for recycling, because the entire product is of paper and/or other natural fibrous products. This avoids costly post-processing of the product before it can be disposed of.

[0078] The present invention avoids the use of glue to mount a paper display poster, thereby allowing the display poster to be disposed of in an environmentally friend-

ly way after use. The present invention allows the majority of the display poster to be recycled, free of potentially toxic glue. Even where small quantities of plastic coating 20A, 20B are used to coat the paper web 16, and where a chemical adhesive is used to bond the edging strip to the paper display poster, these small areas which contain other chemicals can be easily separated from the paper display poster to leave a totally uncontaminated paper poster for recycling. Furthermore the weight proportion of the non-natural fibre products in the complete display poster/edging strip construction is very small, even with a plastic coating on the web and an adhesive between the poster and the web, so that the complete display poster/edging strip construction can be disposed of in disposal sites with strict limits on the proportion of plastics and/or chemicals.

[0079] The present invention allows the use of a single large printed sheet of paper, and avoids the need for a skilled operator to join component parts of a display poster to make a complete paper display poster.

[0080] The present invention allows easy transport of the paper display poster, complete with its display poster edging strips, either in rolled form, as illustrated in Fig. 5, or as a folded package, since the flange can be constructed as a flexible foldable flange.

[0081] The present invention provides a convenient way of fixing a paper poster to a support structure at a fraction of the cost of alternative systems. Using paper for the display poster is the most economical form of poster production. Using paper for the edging strips means that the material cost of the edging strips is minimised, and it then becomes economical to use the edging strips as single use items, which can be recycled together with the display poster after use.

[0082] The present invention makes efficient use of materials since the edging strip, being of paper or similar, has a strength of the same order of magnitude as the display poster itself, which is also of paper. Material is not wasted in providing an edging strip which is much stronger than the poster which it is supporting.

[0083] The paper used for the edging strip can have a coating which allows easy fixing to the display poster by application of heat, but which is non-sticky under normal conditions. This makes fixing of the edging strip very easy, particularly under factory conditions, for example in the printing works where the display poster is printed.

[0084] The web 16 of the edging strip can include any required number of layers of paper. Where the term paper is used in this specification is to be understood to encompass thin and thick paper including card. The flange 14 can have any suitable shape or construction, as long as it is recyclable with other paper and natural fibre products.

[0085] These and other modifications and improvements may be incorporated without departing from the scope of the present invention.

Claims**1.** A display poster edging strip (10) comprising:

a longitudinal flange (14) adapted to be located in a longitudinal track (56),
and
a web (16) extending from the flange (14), wherein the flange (14) is of a thickness greater than the thickness of the web (16), wherein the web (16) comprises paper or card of natural fibrous materials, wherein the flange (14) comprises natural fibrous materials, and wherein the web (16) includes adhesive means adapted to secure the web (16) to an edge of a paper display poster.

2. A display poster edging strip (10) according to claim 1, wherein the flange (14) comprises paper or card or a mixture of paper or card with a fibrous material selected from hemp, sisal, string, wood, wool or cord.**3.** A display poster edging strip (10) according claim 2, wherein the web (16) is of paper and the flange (14) is formed by wrapping the web (16) around the fibrous material and adhering the web (16) to itself.**4.** A display poster edging strip (10) according any preceding claim, wherein the adhesive means comprises a contact adhesive material (18) applied to one surface of the web (16), the contact adhesive material (18) being covered by a release paper (19) adapted to be removed before securing the web (16) to an edge of a paper display poster (40).**5.** A display poster edging strip (10) according any preceding claim, wherein the web (16) comprises paper having a plastic coating on both surfaces of the paper.**6.** A display poster edging strip (10) according to claim 4, wherein the plastic coating is a heat activated coating adapted to permit adhesion under heating to a similar coating.**7.** A display poster edging strip (10) according to any preceding claim, wherein the flange (14) comprises a hollow tube comprising one or more layers of paper and/or card.**8.** A display poster edging strip (10) according to any preceding claim, wherein the flange (14) comprises a solid core (34) comprising several layers of paper and/or card folded onto each other.**9.** A display poster edging strip (10) according to any preceding claim, wherein the web comprises two lay-

ers of paper and/or card, each layer extending from one side of the core

10. A display poster of paper (40) having a top edge, a bottom edge and opposing side edges, the display poster having a display poster edging strip (10) according to any of claims 1 to 9 secured to at least one of the top edge, bottom edge and side edges.**11.** A display poster of paper (40) having a top edge, a bottom edge and opposing side edges, the display poster having a display poster edging strip (10) according to any of claims 1 to 9 secured to each of the top edge, bottom edge and side edges.**12.** A display poster (40) according to claim 10 or 11, wherein the paper web (16) of the display poster edging strip (16) is secured directly to an edge region of the display poster (40), wherein the edge region comprises paper.**13.** A display poster (40) according to claim 12, wherein the edge region of the display poster (40) is coated with an adhesive means comprising a heat activated adhesive material applied to one surface of the display poster (40).**14.** A method of installing a paper display poster (40) having a top edge, a bottom edge and side edges on a support structure (50), the method comprising in a first stage:

securing a top rail (54) to the support structure (50) at an intended location of the top edge of the display poster (40), the top rail (54) having a longitudinal track (56) therein; and
securing a plurality of second fasteners (74) of mutually engageable fastening means (64, 76) to the support structure (50) at an intended location of the bottom edge of the display poster (40);

and the method comprising in a second stage:

securing a display poster edging strip (10) comprising a longitudinal flange (14) of natural fibrous material and a paper web extending therefrom to the top edge of the display poster (40) by adhering the paper web to an edge area of the paper display poster (40);
securing a display poster edging strip (10) comprising a longitudinal flange (14) of natural fibrous material and a paper web (16) extending therefrom to the bottom edge of the display poster (40) by adhering the paper web (16) to an edge area of the paper display poster (40);
locating the longitudinal flange (14) of the edging strip (10) at the top edge of the display poster in

the longitudinal track (56) of the top rail (54);
 locating the longitudinal flange (14) of the edging
 strip (10) at the bottom edge of the display poster
 (40) in a longitudinal track (62) of a bottom rail
 (60); 5
 tensioning the display poster (40) by pulling the
 bottom rail (60) downwards; and
 attaching the bottom rail (60) to the support
 structure by engaging a plurality of first fasteners
 (64) of the mutually engageable (64, 76) fasten- 10
 ing means provided on the bottom rail (60) with
 the second fasteners secured on the support
 structure (50).

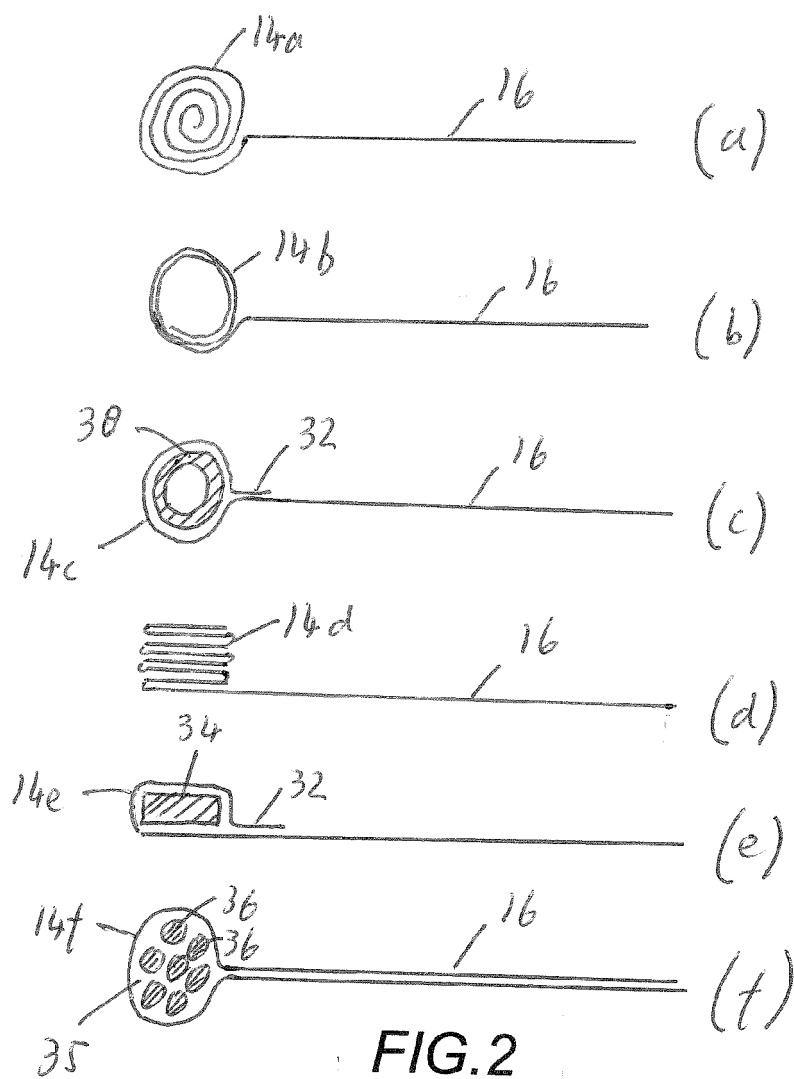
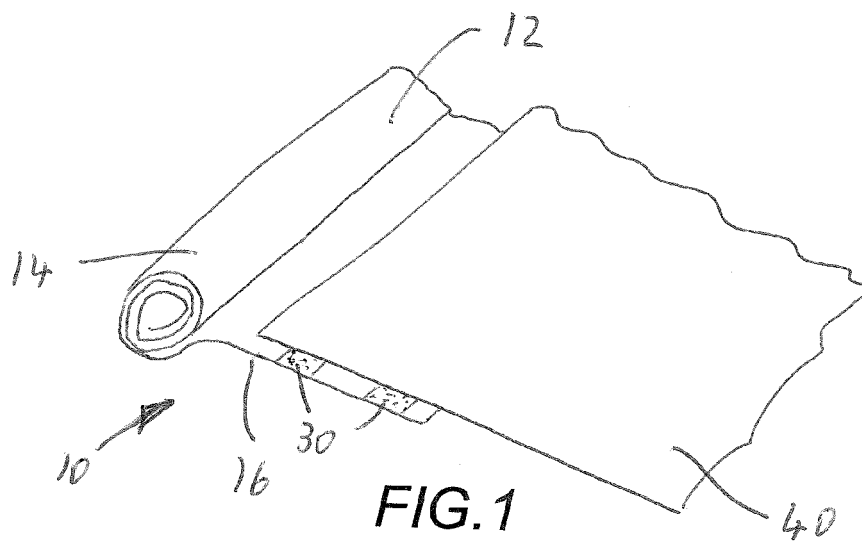
15. A method of uninstalling a paper display poster (40) 15
 having a top edge, a bottom edge and side edges
 from a support structure (50), the support structure
 (50) having associated therewith a top rail (54) and
 a bottom rail (60) each having a longitudinal track
 (62) therein; 20
 wherein the paper display poster (40) includes first
 and second display poster edging strips (10) com-
 prising a longitudinal flange (14) of natural fibrous
 material and a paper web (16) extending therefrom
 adhered to an edge area of the paper display poster 25
 (40) adjacent the top and bottom edges respectively;
 the method comprising the steps of:

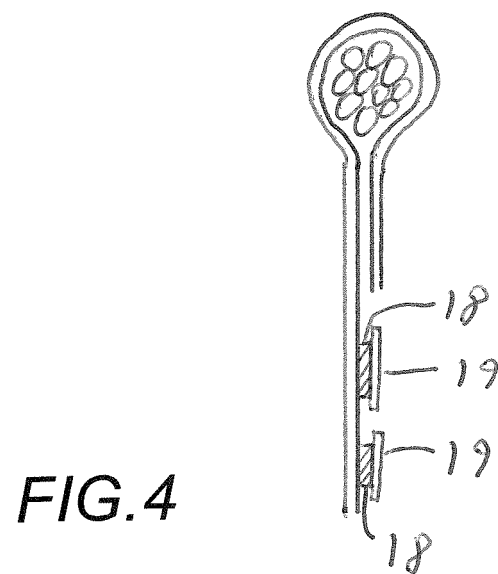
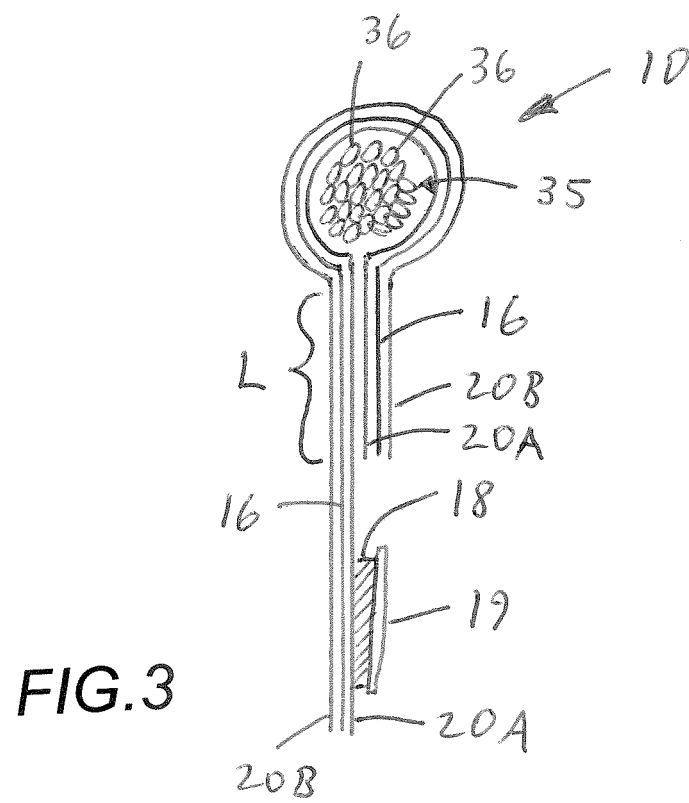
releasing the bottom rail (60) from the support
 structure (50) by peeling apart a plurality of first 30
 fasteners (64) of a mutually engageable (64, 76)
 fastening means provided on the bottom rail (60)
 from second fasteners (76) secured on the sup-
 port structure (50);
 removing the longitudinal flange (14) of the edg- 35
 ing strip at the top edge of the display poster
 (40) from the longitudinal track (56) of the top
 rail (54);
 removing the longitudinal flange (14) of the edg- 40
 ing strip (10) at the bottom edge of the display
 poster from the longitudinal track (62) in the bot-
 tom rail (60); and
 disposing of the display poster (40) and display
 poster edging strips (10) for recycling. 45

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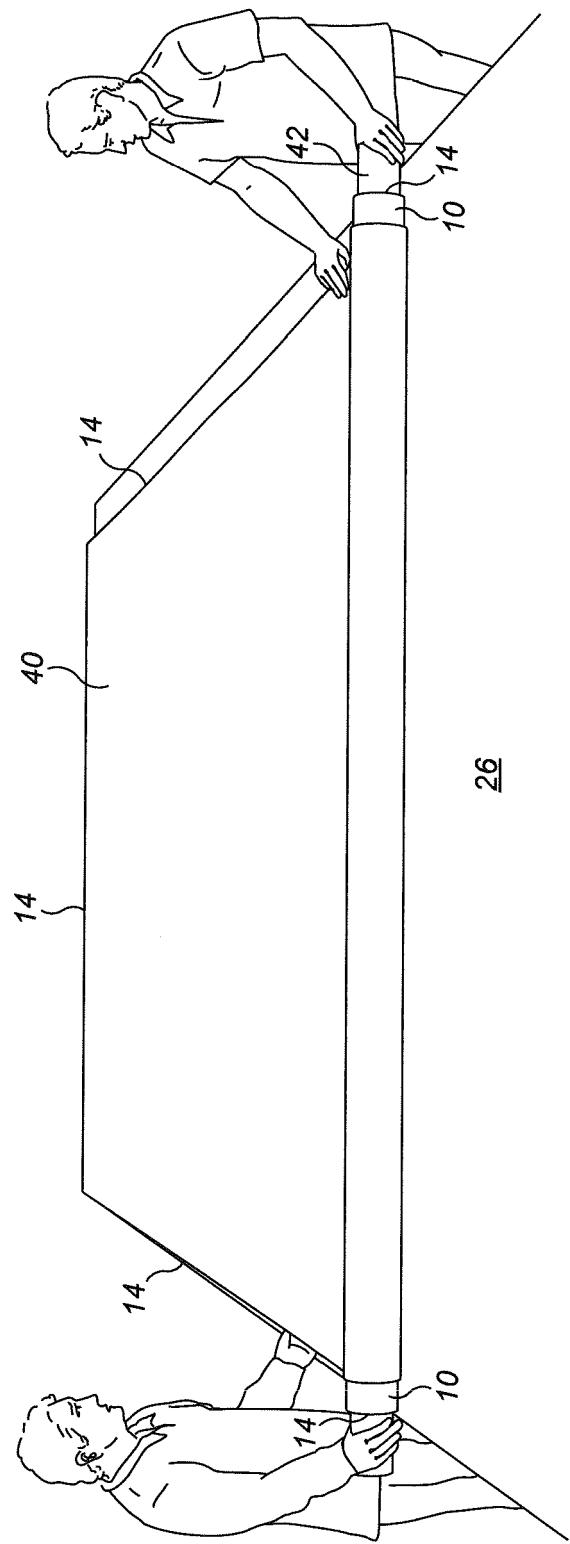


FIG. 5

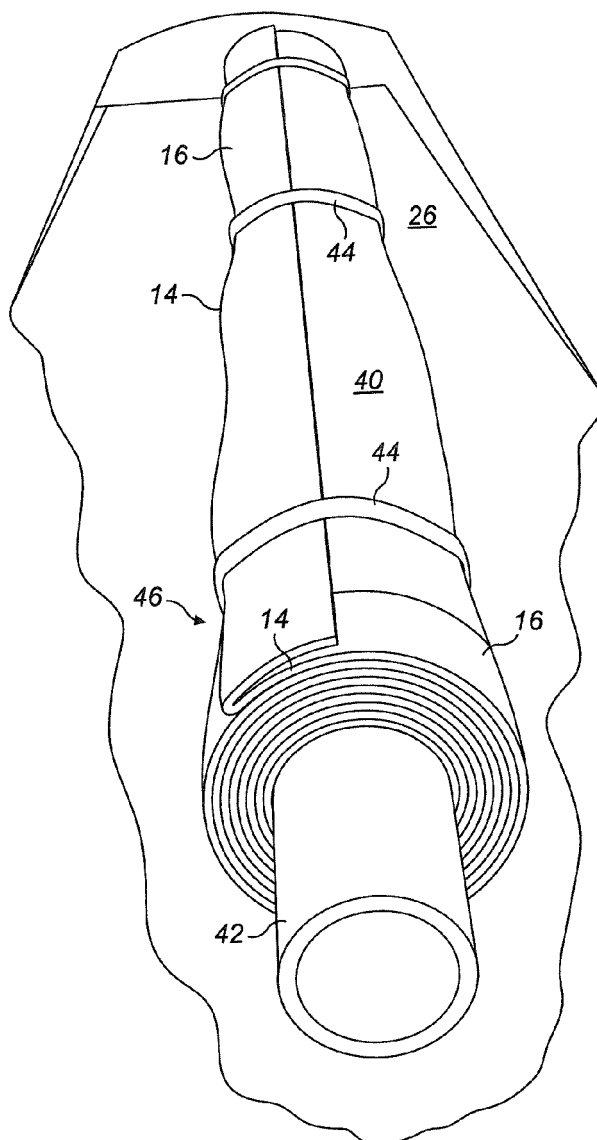


FIG. 6

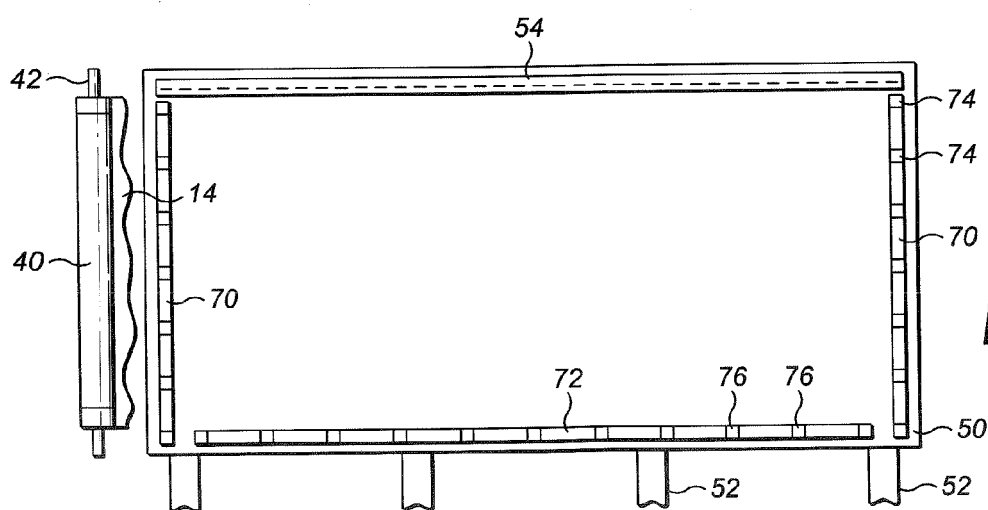


FIG. 7

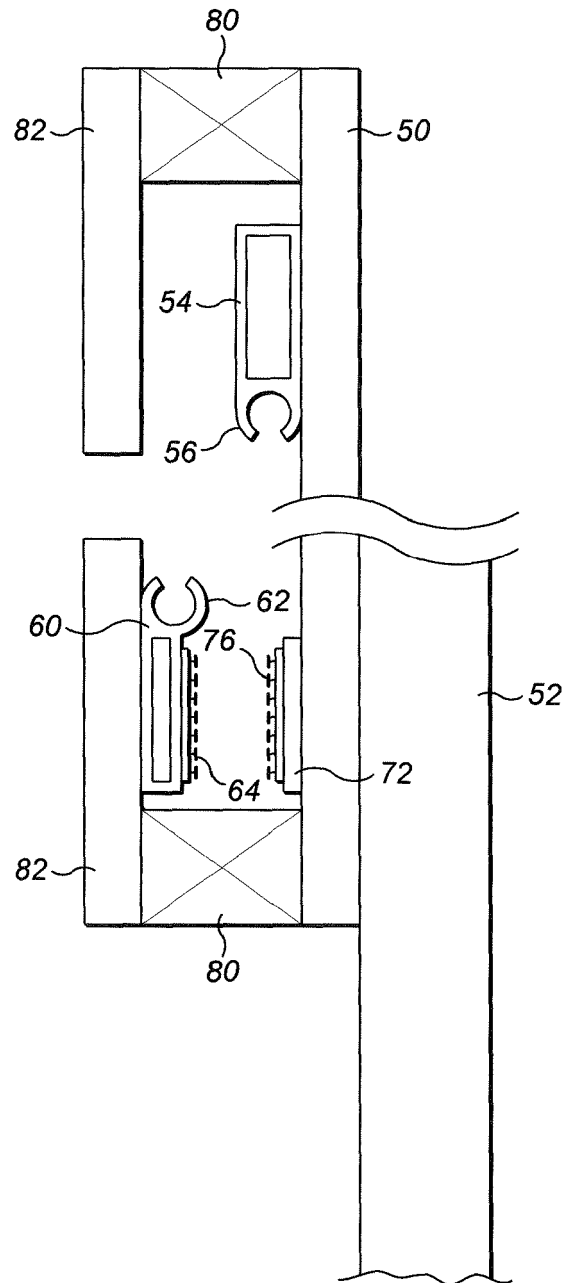


FIG. 8

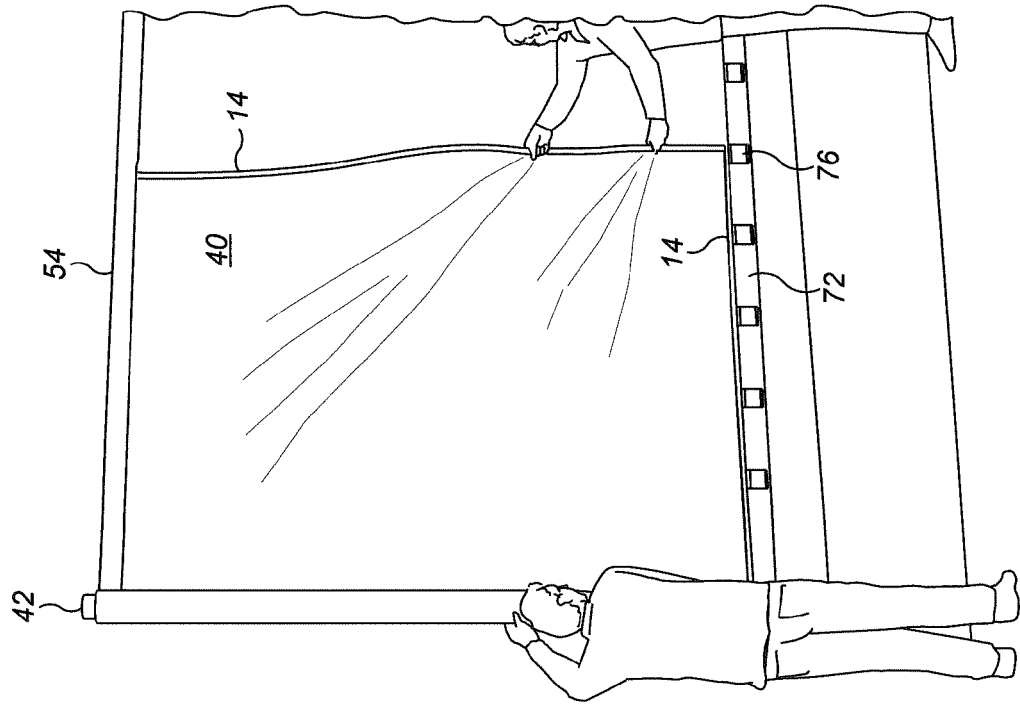


FIG.10

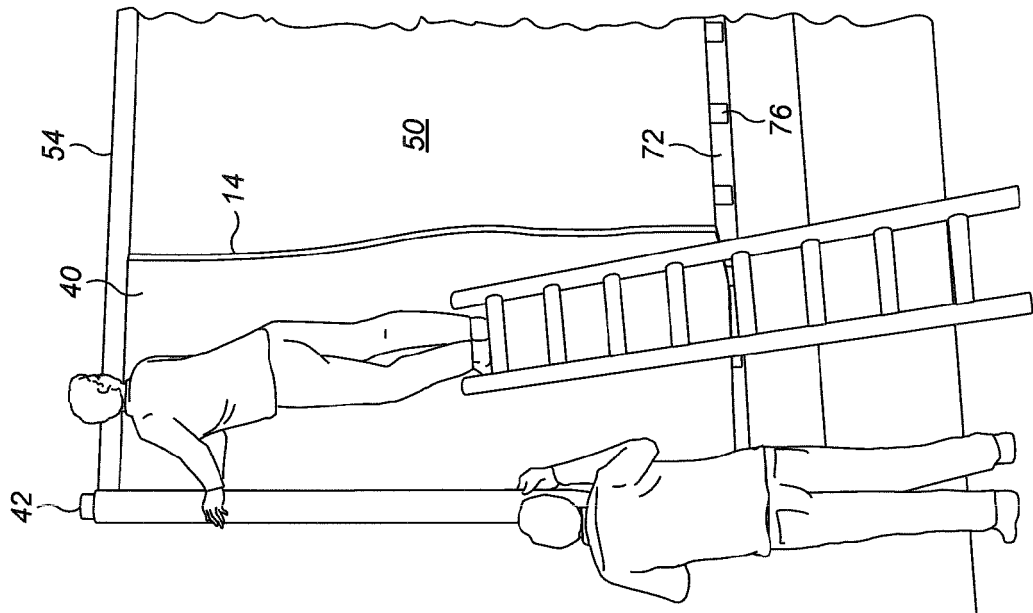
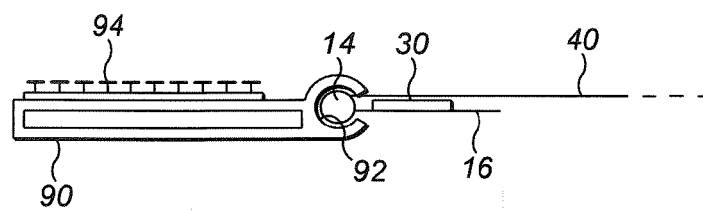
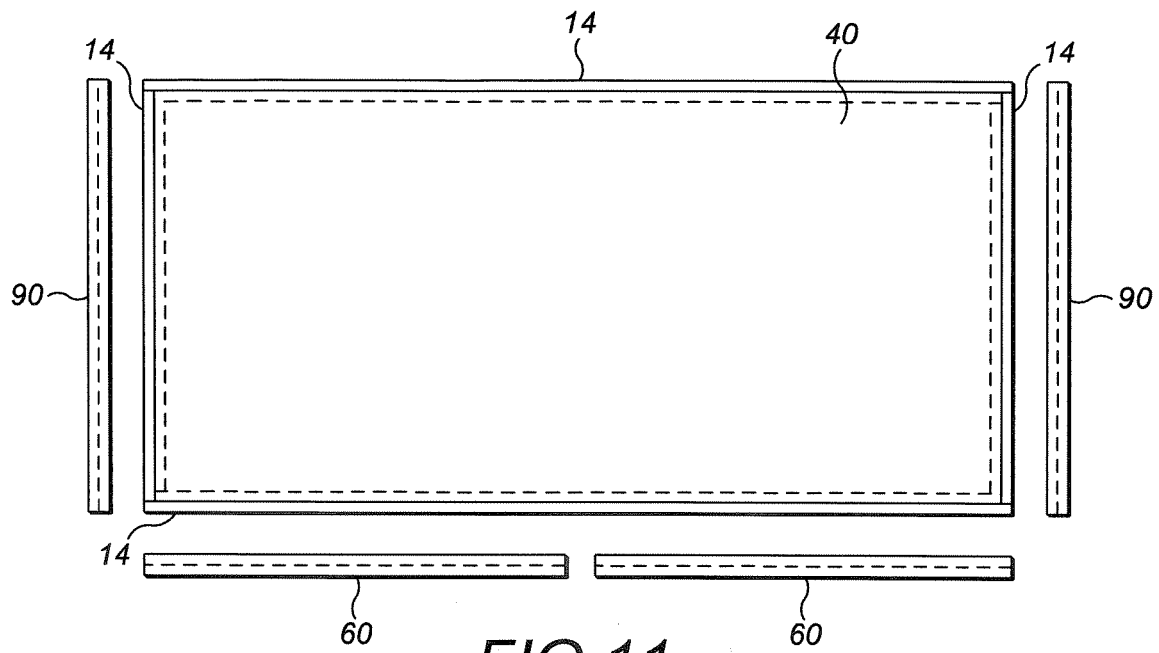


FIG.9





EUROPEAN SEARCH REPORT

Application Number
EP 15 15 5649

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	WO 2012/156680 A1 (AGRIPAFLEX LTD [GB]; PITT JOHN [GB]) 22 November 2012 (2012-11-22)	1-5, 9-11,14, 15 6-8,12, 13	INV. G09F15/00 G09F15/02 G09F19/22
A	* page 1, lines 3-6 * * page 2, lines 5-12 * * page 5, lines 10-15 * * page 10, lines 5-8 * * page 14, line 27 - page 16, line 9 * * page 18, lines 6-29 * * page 23, lines 4-16 * * page 24, line 14 - page 25, line 3 * * page 25, lines 18-29 * * page 27, line 24 - page 29, line 3 * * page 29, line 16 - page 30, line 11 * * figures 1-17 *		ADD. G09F7/18
A	WO 00/57394 A1 (MOBILE IMPACT INC [US]) 28 September 2000 (2000-09-28) * page 6, lines 4-37 * * figures 1-13 *	1-15	
A	US 2009/206228 A1 (PITT JOHN DUNLOP [GB] ET AL) 20 August 2009 (2009-08-20) * paragraphs [0001], [0089], [0098] * * figures 1-18 *	1-15	TECHNICAL FIELDS SEARCHED (IPC) G09F A47F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 July 2015	Examiner Zanna, Argini
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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17-07-2015

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