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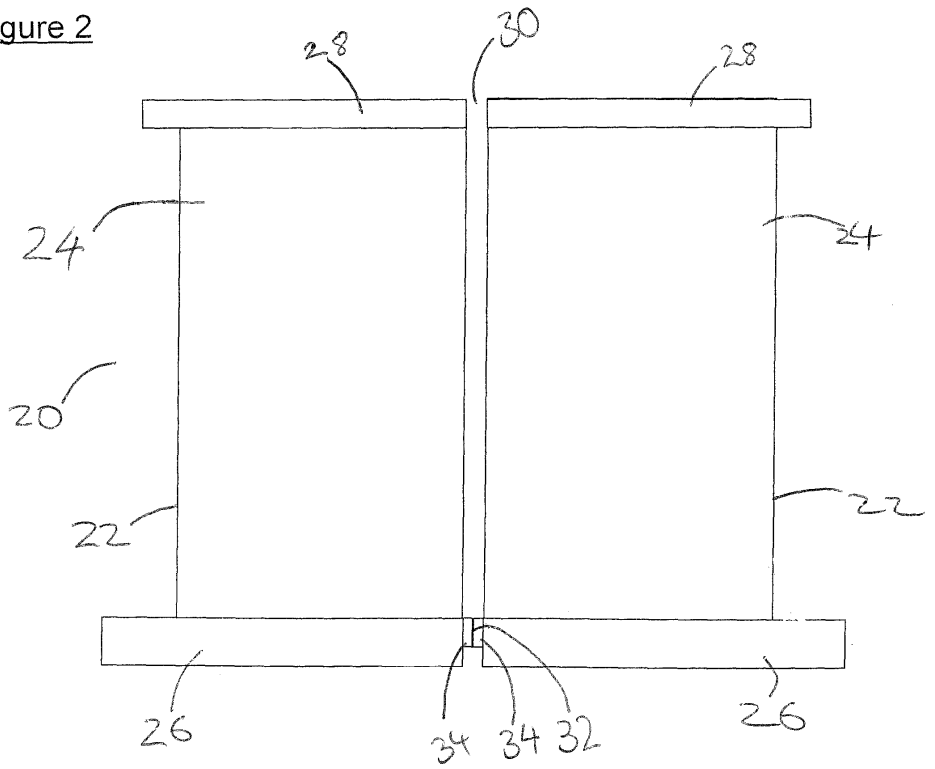
Amended claims in accordance with Rule 137(2) EPC.

(54) Visual Display Apparatus

(57) In one aspect, the invention comprises a visual display apparatus (20) comprising more than one visual display unit (22), each visual display unit (22) comprising a base (26) and a banner (24), said banner (24) being capable of extension from and retraction towards said base (26) and wherein said banner (24) comprises support sufficient to hold the banner (24) in its extended position when the banner (24) is extended in an upward direction, said visual display apparatus (20) further comprising at least one fastener (34) for attaching the base (26) of a first visual display unit (22) to the base (26) of a second visual display unit (22) and wherein said fastener (34) comprises at least one magnet.

Figure 2



EP 2 333 754 A1

Description

Field of the Invention

[0001] The present invention relates to visual display apparatus, and in particular, visual display systems comprising a plurality of visual display units and devices comprising retractable devices, such as floor standing roll-ups.

Description of Prior Art

[0002] Portable visual display devices are well known. They may be used for a large number of different applications, such as the display of advertising and marketing material, in situations such as trade shows and exhibitions. Common forms include a banner, a photomural display panel and visual display media.

[0003] There is a wide variety of visual display devices available, including both rigid and flexible types. Three examples of such devices may be found at US4694601 DICKE, US4875302 NOFFSINGER and US5362020 BROWN.

[0004] The inventions of this application concern flexible stands, and in particular retractable and roll-up type stands. A great advantage of these roll-up stands is their portability. When required to form a display, the display portion of the stand may be unrolled from a base or base portion and is then kept in its extended form for the duration of the display by a retainer. It is often the case that the display portion extends upwards, and the retainer takes the form of an in use vertical "backbone", to which the display portion is attached and from which it hangs.

[0005] The downside to such portability is an overall limitation in the size of the advertisement. In particular, banners of this sort tend to be tall, but not particularly wide.

[0006] It is possible to arrange a plurality of stands, so that their banners give the appearance of forming parts of a single picture. The problem here is that it is very easy to move these stands, with the result that the clear message they are supposed to deliver becomes at worst incoherent and at best distorted.

[0007] Methods of fixing a plurality of stands together are known - mostly these are improvised. One exception is that system provided by Expand Internat AB of Sweden. In their system, a connection is formed adjacent the top of each banner. This linkage has proved unstable, with unwanted uncoupling happening often. A reason for this is that disruption to the formation of stands tends to occur at or near the base - they are pushed or kicked.

[0008] There is a clear need for a wide-message multi-stand system to be invented, which retains the excellent portability characteristics of the roll-up stands, but is sturdier and more effective than the known coupled ones.

[0009] It is amongst the objects of the inventions contained in this application to offer a solution to these and other problems.

Summary of the invention

[0010] In a first broad, independent aspect, the invention comprises a visual display apparatus, comprising more than one visual display unit, each visual display unit comprising a base and a banner, said banner being capable of extension from and retraction towards said base and wherein said banner comprises support sufficient to hold the banner in its extended position when the banner is extended in an upward direction, said visual display apparatus further comprising at least one fastener for attaching the base of a first visual display unit to the base of a second visual display unit and wherein said fastener comprises at least one magnet.

[0011] This new configuration has a marked advantage over the prior art in that the prior art connects a first stand to a second stand at or adjacent the top of each stand. By attaching at the bottom this new configuration ensures for a more stable and durable connection, which in turn ensures that the stands or units are able to retain their spatial relations to each other, thereby ensuring the consistent delivery of a coherent message, such as an advertising image with text.

[0012] A further advantage is to be enjoyed through the use of a magnet, rather than a different sort of connection. The choice of at least one magnet is particularly useful recognising as it does the metallic composition of elements of the stand and further the speed with which objects can be connected using magnetism.

[0013] In a first subsidiary aspect, at least one further fastener located substantially at the (in use) top of the banner, when said banner is fully extended in an upwards direction, thus allowing the attachment of a first banner to a second banner, wherein the, or at least one of the, further fasteners(s) comprises a non-magnetically functioning fastener.

[0014] Putting fasteners in at both the top and bottom further ensures stability, durability of spatial interrelations and the resulting coherence of message.

[0015] In a second subsidiary aspect, at least one of the fasteners is readily removable from the visual display apparatus.

[0016] Ready removability is of great advantage as it allows for the quick swapping around of parts in order that such a system may be more readily assembled. This is a particularly clear advantage in a scenario where there are multiple stands in a rolled up position and this is unclear as to which one ought to be connected to another. By making the connections readily removable you minimise the amount of time and effort that may be required to move stands into their respective correct positions.

[0017] In a third subsidiary aspect, the apparatus further comprises one or more inserts, which in use is inserted between a first portion and a second portion so as to create, in use a gap between the banners when they are in an extended position, wherein the or each insert comprises at least a component of a fastener.

[0018] The insert which incorporates a fastener is ad-

vantageous because it creates a large connection baseprint - in preferred embodiments the inserts covers a greater area than the end of a given base portion — which provides strength of connection. The use of an insert/fastener combination also allows the building in of secondary connection means such as for example tabs.

[0019] A further recognised advantage is afforded by the gaps between banners which are uniformly sized due to the inserts. Research shows that from a distance these gaps do not detract from the coherence of the message of a given advertising or marketing display and further the creation of the gaps in some case increases the clarity of advertising messages in that the user does not have to worry about the exact alignment of a first banner to a second banner in order to create an image.

[0020] Preferably, at least one magnet is housed in the insert.

[0021] Preferably, the insert comprises at least two magnets arranged in pairs.

[0022] Preferably, the first of each pair of magnets is so orientated within the insert that it attracts the second of its respective pair.

[0023] This configuration of magnets is particularly useful in that it is both encased and orientated in such a way that it may be used immediately by the person or people setting up the stands. The shape of the insert is to an extent preordained by the shape of the end of each base.

[0024] Preferably, the insert further comprises a frame of a plastics construction comprising a plurality of internal reinforcement ribs.

[0025] Reinforcement ribs advantageously strengthen the insert.

[0026] Preferably, the insert further comprises at least one lip which upon attachment of the insert to a base overlays said base.

[0027] The lip provides a further alignment by way of a non-frictional fit to each end portion of said base. The lip may be of a deformable plastics material provides a means of quickly and readily connecting portions. This sort of fit may be useful as a means of guiding a first end into location with another.

[0028] In a fourth subsidiary aspect each base portion comprises at least one insert receiving face, and at least one end cap which obscures said insert receiving face and which must be entirely removed from said face before said face can receive an insert.

[0029] The provision of an end cap is advantageous in that it protects the portions of the base end which couple with at least one of the insert, the fastener and another stand end.

[0030] In a second broad independent aspect, the invention comprises a visual display apparatus comprising three visual display units, each visual display unit comprising a base, said base being of a substantially tubular shape, and having a first end and a second end, each visual display unit further comprising a banner, said banner being capable of extension from and retraction towards said base and wherein said banner comprises support sufficient to hold the banner in its extended position when the banner is extended in an upward direction, said visual display apparatus further comprising a first set of fasteners allowing a first base to be connected to a second base and said second base to be connected to a third base, and a second set of fasteners located on or adjacent the in use top of each said banner, thus allowing a first banner coupled to a second banner and said second banner to be coupled to a third banner and wherein each fastener comprises at least one magnet.

[0031] In a first subsidiary aspect of the second broad independent aspect, of the three units, one unit has insert receiving faces on both the first end and the second end of its base, a second unit has an insert receiving only on the first end of its base, and a third unit has an insert only on the second end of its base.

[0032] In a second subsidiary aspect of the second broad independent aspect, each of the units has insert receiving faces on both the first end and the second end of its base.

[0033] In a third broad independent aspect, the invention comprises a method of assembling the apparatus of any of the previous claims, comprising the steps of:

i) Arranging a plurality of visual display units so that their bases are substantially aligned,
ii) Extending the banners, so that the banner portions occupying substantially the same plane,
iii) Utilising a first set of fastener components so that a first end of a base is attached to a second end of and adjacent base.

[0034] In a first subsidiary aspect of the third broad independent aspect, step ii) comes before step i).

[0035] In a first subsidiary aspect of the third broad independent aspect, the invention comprises the further step at position iii) or iv) of utilising a second set of fastener components to attach a portion of a first banner adjacent the end furthest from the base of said visual display unit, to a corresponding portion of a second visual display unit.

[0036] This visual apparatus is particularly inventive in that it provides a solution for the display of large adverts that can be set up by a single user.

[0037] The invention further comprises a visual display apparatus substantially as described herein with reference and as illustrated in any appropriate combination of all but figure 1 of the accompanying text and/or drawings.

Brief description of the figures

[0038] The practical embodiments of the invention will now be described with reference the accompanying drawings in which:

Figure 1 is a diagrammatic side view of a visual rep-

resentation system of the prior art.

Figure 2 is a diagrammatic side view of a visual representation system of the invention.

Figure 3 is a diagrammatic side view of a fastener-insert of the invention.

Figure 4 is a perspective view of a base portion of the invention and a fastener-insert of the invention, prior to attachment.

Figure 5 is a perspective view of two base portions of the invention and a fastener-insert of the invention, prior to attachment.

Figure 6 is a diagrammatic perspective view of a fastener-insert of the invention subsequent to attachment to a single base portion.

Figure 7 is a cross-sectional plan view of a fastener-insert of the invention.

Figure 8 is a cross-sectional side view of a fastener-insert of the invention.

Figure 9 illustrates the arrangement of the magnets of the invention.

Figure 10 is a perspective view of a further fastener of the invention.

Figure 11 is a perspective view of an end cap of the invention attached to a base portion of the invention.

Figure 12 is a diagrammatic side view of a further embodiment of the invention.

Detailed description of the preferred embodiments

[0039] At figure 1 there is shown generally a visual display apparatus of the prior art. The visual display apparatus 2 comprises in this instance two visual display units 4 which here take the form of roll up stands. Each visual display unit 4 comprises a base 6 and a retractable or roll up display portion 8 upon which may be displayed a message such as an advertisement. Such an area will be referred to in the rest of this description as a banner 8. In most although not all cases the base 6 of a given visual display unit 4 will engage with the ground (not shown) and the banner 8 will extend skywards. The banner 8 extends from and retracts into the base 6 in a manner well known to the skilled man. The banners 8 of the visual display apparatus 2 of the prior art have a top end which in this embodiment comprises a rail 10 for keeping the banner 8 spread in a substantially flat, presentable position. The rail 10 of each unit 4 further comprises a connector 12 in the form of two magnets, each magnet being mounted on the rail 10 of a respective visual display unit 4. It is not known in the prior art to connect the bases 6 together. Nor is it known to connect both first base 6 to a second base 6 and a first banner 8 to a second banner 8 at the same time.

[0040] Figure 2 shows a visual display apparatus 20 of the invention. Like the prior art this embodiment comprises a plurality of visual display units 22. In preferred embodiments two or three such units 22 or stands may be used but, there is no limit to the number of stands which can be connected.

[0041] Each visual display unit 22 comprises a banner 24 and a base 26. The type of display unit 22 embodied here is again a roll up stand, the workings of which are well known and have already been discussed in relation to the prior art. Other types of visual display unit 22, for example comprising rigid banner portions may be substituted for this roll up design. The roll up visual display unit 22 is constructed from a combination of plastics, metals, wood, paper and other appropriate materials which the skilled man may become aware of. The visual display unit 22 further comprises a top end 28 which in this embodiment is a rail.

[0042] The key points of difference from the prior art are shown very clearly in this simplified diagram of the invention. Likewise, whereas in the prior art there is a connection between the rails 10, in the analogous site of the invention there is a gap 30. Where in the prior art there is a gap between the two bases, in this embodiment of the invention, there is a connection 32 formed by one or more fasteners 34 (in this case there are two). In this embodiment of the invention the fasteners 34 hold the two visual display units 22 in a relationship of close proximity, but the size of the gap 30 is discretionary. The connection 32 between the fasteners is a purely magnetic one. Because this connection is formed at the base, and also due to the strength of the magnets themselves the connection is a strong one when considered in relation to the prior art.

[0043] At figure 10 there is shown a further embodiment of the visual display apparatus 20 of the invention comprising two visual display units 22. Parts, which are shown include top rail 28 of each visual display unit 22. The rails 28 notably comprise a first portion 36 and a second raised portion 38 which together define a depression 40. The depression 40 follows a continuous linear path across the top end 28. This depression 40 is so sized and shaped as to be suitable for taking a further fastener 42. The further fastener 42 may, for example, clip, rotate or slide into the depression 40. The further fastener may be a frictional fit solely or as in this embodiment comprise at least in part a magnet. The further fastener 42 shown at figure 10 fastens onto rail 28 via first tab 46 and second tab 48. The tabs 46 and 48 may be positioned laterally along central portion 50. The two tabs 46 and 48 may be slid out of the depression 40 by being moved along or rotated relative to said depression 40. In order to connect them to the rail they may be moved

in the opposite direction. Alternative more conventional clips will be known to the skilled man. This further fastener 42 is readily removable from the visual display unit 22.

[0044] At figure 3 there is shown an insert 52. This insert 52 is used for attaching base portions together. The insert 52 comprises a frame 54. The frame 54 itself comprises a plurality of ribs 56 which are so shaped as to provide maximum support to the insert 52. The shape of the insert 52 in this embodiment is very similar to the side section of the corresponding base 26 to which it is attached. This need not be the case; and insert 52 may be of a different shape to the base 26 to which it is designed to be attached.

[0045] There are two types of attachment means shown at figure 3. First, there is a lip 58 which circumscribes the insert 52. The second and principal means of connection are the two magnets; first magnet 62 and second magnet 64. Both magnets 62 and 64 and the lip 58 will be discussed in more detail further on in this description. Also visible is the central aperture 66, through which the ends of the rolling mechanism can project, thus giving them space to rotate and thereby allowing full functionality of each individual visual display unit 22 within the context of the apparatus 20.

[0046] At figure 4 is shown an insert 52 and a base 26 of a preferred embodiment of the invention. It is clearly shown in this figure that the insert 52 matches the profile of the end 70 of the base 26. Insert 52 further comprises a plurality of reinforcement ribs.

[0047] At figure 5 is shown an insert 52 in between two bases 26. The aperture 66 is particularly clearly shown here; it accommodates the end of the rolling mechanism 68. Several screws 72 roughly follow the perimeter of the end of the base 70 and in preferred embodiments hold the end of the base 70 onto the base 26.

[0048] At figure 6 is shown a visual display apparatus 20 with banner portion 24 (not shown) retracted. The visual display unit 20 comprises here a base 26 and an insert 52 engaged with the base 26. Two key features of insert 52 are visible here. First the aperture 66 is shown in use, housing the ends of the rolling mechanism 80. Said ends 80 are free to be rotated and removed in accordance with the user. Also apparent is lip 58; it is clear that in this embodiment insert 52 has a larger profile than the end of the base 70. The end of the base 70 can therefore be slotted into insert 52 with the lip 58 forming a snug fit. By slotting the end of the base 70 into the insert 52 first magnet 62 and second magnet 64 are brought into contact with the end of the base 70 and a magnetic connection was formed. The magnets 62, 64 run all the way through the insert 52 - in this embodiment they are single magnets — and they are held in place by circular ribbed features 82. Adhesive (not shown) has been added to ensure the fit. First and second magnets 62 and 64 are in contact with the end of the base 70 and are magnetically linked.

[0049] Figure 7 -9 explore the characteristics of the magnets 62 and 64 along with the insert 52. At figure 7 there is shown a magnet formation each of first and second magnets 62 and 64. The formation is shown to comprise two magnets, adjoined by screws 72 in a screw housing 92. Both first and second magnets 62 and 64 are shown to be recessed within insert 52. This serves to protect the magnets.

[0050] Figure 9 is shown a magnet formation and applies to both first magnet 62 or second magnet 64. First magnetic element 94 and second magnet element 96 are arranged so that they attract each other. Within the context of the insert 52, this has the extra effect of adding strength to its structure.

[0051] Figure 11 shows a base 26 with an end cap 100. Like the insert 52, the end cap 100 is slightly larger than the end of the base 70 and has a lip 58, which forms a close fit with said base 26. The end cap 100 is completely detachable from the base 26 and must be removed in order to attach the insert 52. In other embodiments it may be retained in known way. The use of end cap 100 prevents damage to the roll up mechanisms (not shown) and also gives a tidy appearance and aesthetic appeal.

[0052] At figure 12 is shown generally a visual display apparatus comprising visual display units 24 of which there are three. Each such unit comprises a banner 24 and a base 26. Here the bases 26 are tubular. In this embodiment we can see that first base 26 is attached to second base 26a and second base 26a is attached to both first base 26 and third base 26b. Third base 26b is attached to second base 26a. It is possible in this configuration to have two bases (26 and 26b) with only one insert receiving end each. Magnetic inserts are clearly visible at 52 and in this embodiment there are non-magnetic clipping further fasteners 42 attached to rail 28.

[0053] In the context of this specification, the word "banner" is understood to encompass banners, photomural display panels and other visual media.

Claims

1. A visual display apparatus,
   comprising more than one visual display unit, each visual display unit comprising a base and a banner,
   said banner being capable of extension from and retraction towards said base and wherein said banner comprises support sufficient to hold the banner in its extended position when the banner is extended in an upward direction,
   said visual display apparatus further comprising at least one fastener for attaching the base of a first visual display unit to the base of a second visual display unit and wherein said fastener comprises at least one magnet.

2. A visual display apparatus according to claim 1 further comprising at least one further fastener located substantially at the (in use) top of the banner, when

said banner is fully extended in an upwards direction, thus allowing the attachment of a first banner to a second banner, wherein the or at least one of the, further fasteners(s) comprises a non-magnetically functioning fastener.

3. A visual display apparatus according to any of the preceding claims wherein at least one of the fasteners is readily removable from the visual display apparatus.

4. A visual display apparatus according to any of the preceding claims wherein the apparatus further comprises one or more inserts, which in use is inserted between a first portion and a second portion so as to create, in use a gap between the banners when they are in an extended position, wherein the or each insert comprises at least a component of a fastener.

5. A visual display apparatus according to claim 4 wherein at leased one magnet is housed in the insert.

6. A visual display apparatus according to any of claims 4-5 wherein the insert further comprises a frame of a plastics construction comprising a plurality of internal reinforcement ribs.

7. A visual display apparatus according to any of claims 4-6 wherein the insert further comprises at least one lip which upon attachment of the insert to a base overlays said base.

8. A visual display apparatus according to any of the preceding claims wherein each base portion comprises at least one insert receiving face, and at least one end cap which obscures said insert receiving face and which must be entirely removed from said face before said face can receive an insert.

9. A visual display apparatus comprising three visual display units, each visual display unit comprising a base, said base being of a substantially tubular shape, and having a first end and a second end, each visual display unit further comprising a banner, said banner being capable of extension from and retraction towards said base and wherein said banner comprises support sufficient to hold the banner in its extended position when the banner is extended in an upward direction,
said visual display apparatus further comprising a first set of fasteners allowing a first base to be connected to a second base and said second base to be connected to a third base, and a second set of fasteners located on or adjacent the in use top of each said banner, thus allowing a first banner to be coupled to a second banner and said second banner to be coupled to a third banner and wherein each fastener comprises at least one magnet.

10. A visual display apparatus according to claim 9 wherein of the three units, one unit has insert receiving faces on both the first end and the second end of its base, a second unit has an insert receiving only on the first end of its base, and a third unit has an insert only on the second end of its base.

11. A visual display apparatus according to claim 19 wherein each of the units has insert receiving faces on both the first end and the second end of its base.

12. A visual display apparatus substantially as described herein with reference and as illustrated in any appropriate combination of all but figure 1 of the accompanying text and/or drawings.

13. A method of assembling the apparatus of any of the previous claims, comprising the steps of:

i) Arranging a plurality of visual display units so that their bases are substantially aligned,
ii) Extending the banners, so that the banner portions occupying substantially the same plane,
iii) Utilising a first set of fastener components so that a first end of a base is attached to a second end of and adjacent base.

14. A method according to claim 13 wherein step ii) comes before step i).

15. A method according to either of claims 13 or 14 comprising the further step at position iii) or iv) of utilising a second set of fastener components to attach a portion of a first banner adjacent the end furthest from the base of said visual display unit, to a corresponding portion of a second visual display unit.

Amended claims in accordance with Rule 137(2) EPC.

1. A visual display apparatus,
Comprising more than one visual display unit, each visual display unit comprising a base and a banner, said banner being capable of extension from and retraction towards said base and wherein said banner comprises support sufficient to hold the banner in its extended position when the banner is extended in an upward direction,
said visual display apparatus further comprising at least one fastener for attaching the base of a first visual display unit to the base of a second visual display unit and wherein said fastener comprises at least one magnet.

2. A visual display apparatus according to claim 1 further comprising at least one further fastener located substantially at the (in use) top of the banner,

when said banner is fully extended in an upwards direction, thus allowing the attachment of a first banner to a second banner, wherein the or at least one of the, further fastener(s) comprises a non-magnetically functioning fastener.

3. A visual display apparatus according to any of the preceding claims wherein at least one of the fasteners is readily removable from the visual display apparatus.

4. A visual display apparatus according to any of the preceding claims wherein the apparatus further comprises one or more inserts, which in use is inserted between a first visual display unit and a second visual display unit so as to create, in use a gap between the banners when they are in an extended position, wherein the or each insert comprises at least a component of a fastener.

5. A visual display apparatus according to claim 4 wherein at least one magnet is housed in the insert.

6. A visual display apparatus according to any of the claims 4-5 wherein the insert further comprises a frame of a plastics construction comprising a plurality of internal reinforcement ribs.

7. A visual display apparatus according to any of claims 4-6 wherein the insert further comprises at least one lip which upon attachment of the insert to a base overlays said base.

8. A visual display apparatus according to any of the preceding claims wherein each base portion comprises at least one insert receiving face, and at least one end cap which obscures said insert receiving face and which must be entirely removed from said face before said face can receive an insert.

9. A visual display apparatus comprising three visual display units, each visual display unit comprising a base, said base being of a substantially tubular shape, and having a first end and a second end, each visual display unit further comprising a banner, said banner being capable of extension from and retraction towards said base and wherein said banner comprises support sufficient to hold the banner in its extended position when the banner is extended in an upward direction,
said visual display apparatus further comprising a first set of fasteners allowing a first base to be connected to a second base and said second base to be connected to a third base, and a second set of fasteners located on or adjacent the in use top of each said banner, thus allowing a first banner to be coupled to a second banner and said second banner to be coupled to a third banner and wherein each fastener comprises at least one magnet.

10. A visual display apparatus according to claim 9 wherein of the three units, one unit has insert receiving faces on both the first end and the second end of its base, a second unit has an insert receiving only on the first end of its base, and a third unit has an insert only on the second end of its base.

11. A visual display apparatus according to claim 9 wherein each of the units has insert receiving faces on both the first end and the second end of its base.

12. A method of assembling the apparatus of any of the previous claims, comprising the steps of:

i) Arranging a plurality of visual display units so that their bases are substantially aligned,
ii) Extending the banners, so that the banner portions occupying substantially the same plane,
iii) Utilising a first set of fastener components so that a first end of a base attached to a second end of and adjacent base.

13. A method according to claim 12 wherein step ii) comes before step i).

14. A method according to either of claims 12 or 13 comprising the further step at position iii) or iv) of utilising a second set of fastener components to attach a portion of a first banner adjacent the end furthest from the base of said visual display unit, to a corresponding portion of a second visual display unit.

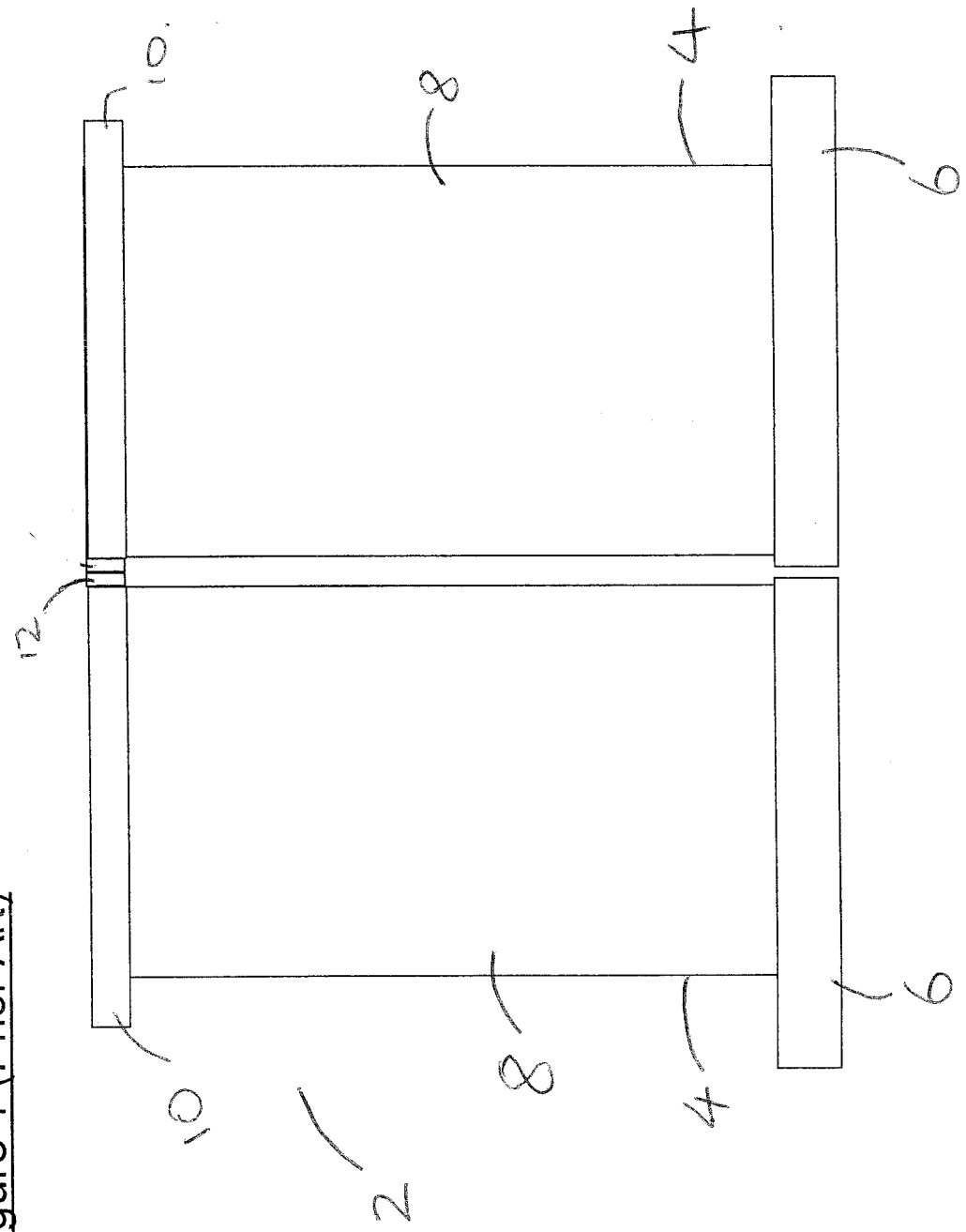


Figure 1 (Prior Art)

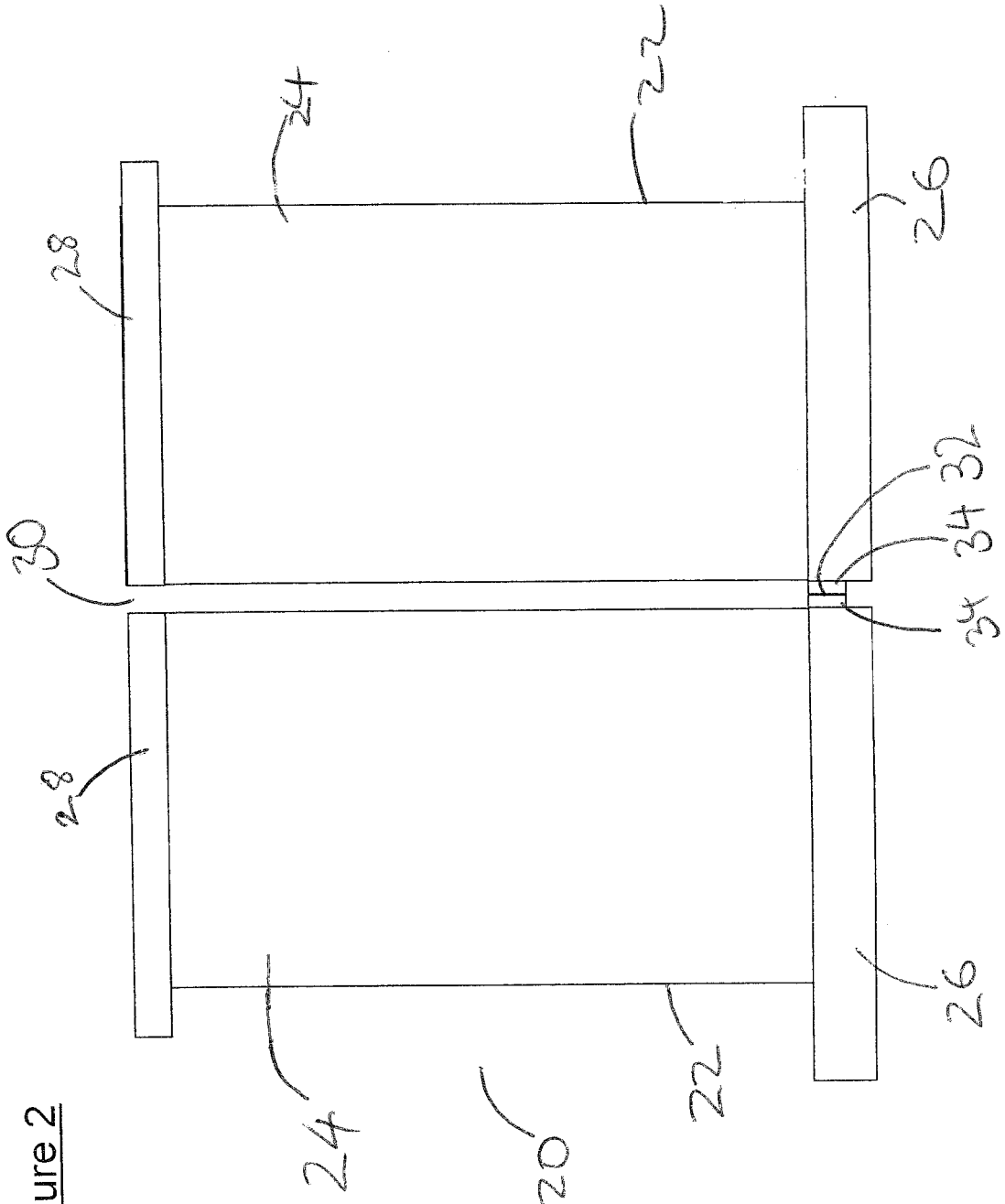


Figure 2

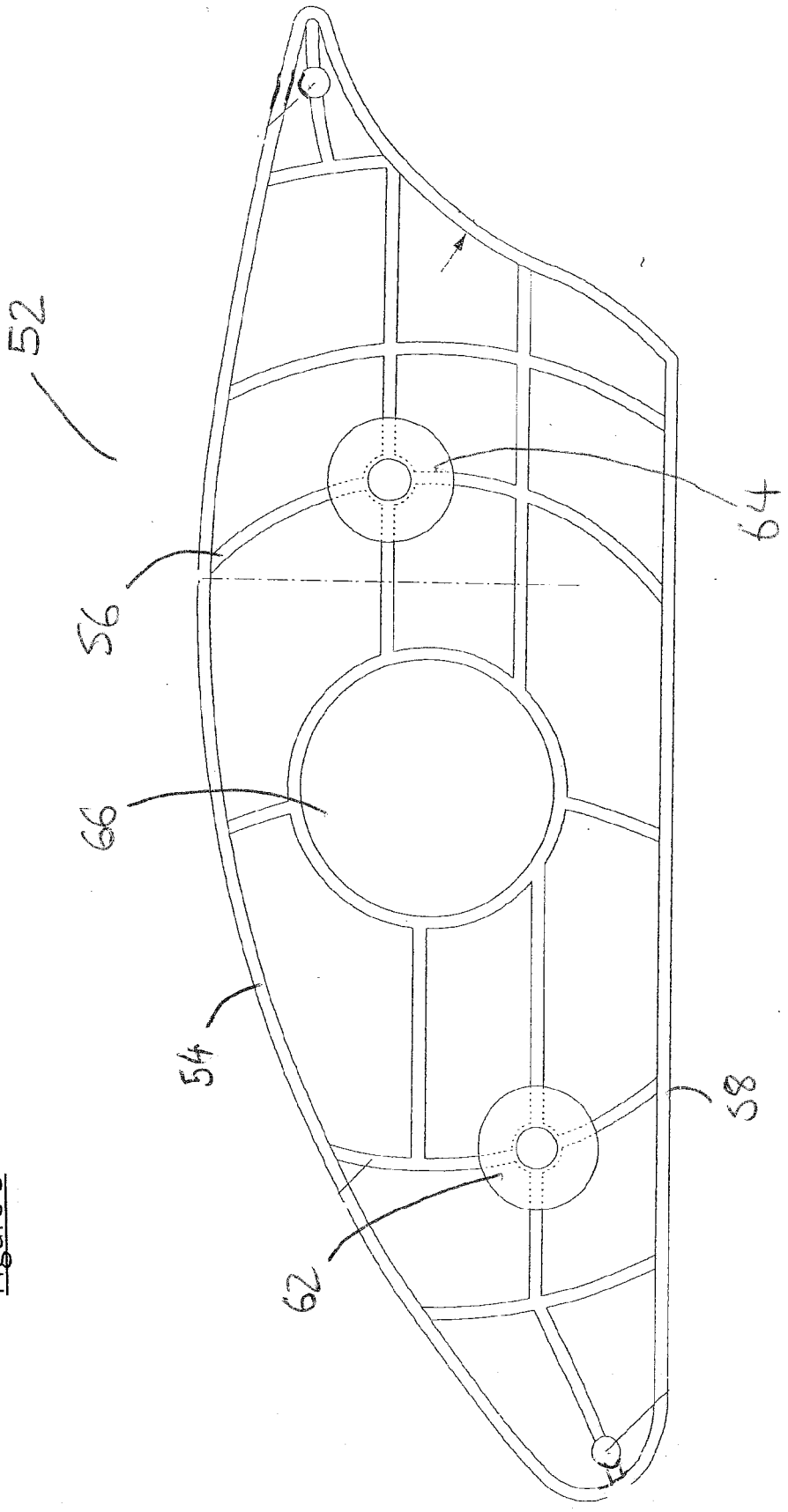


Figure 3

Figure 4

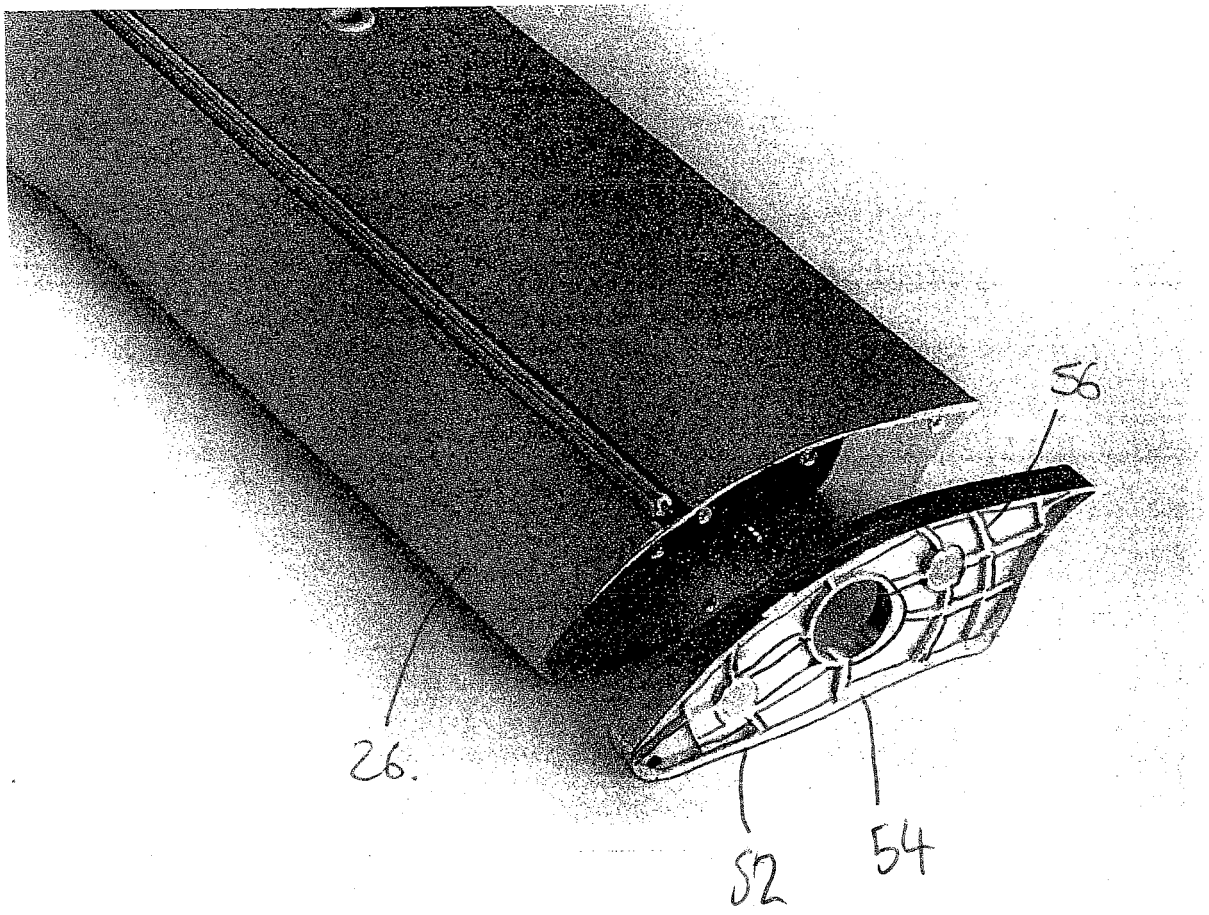
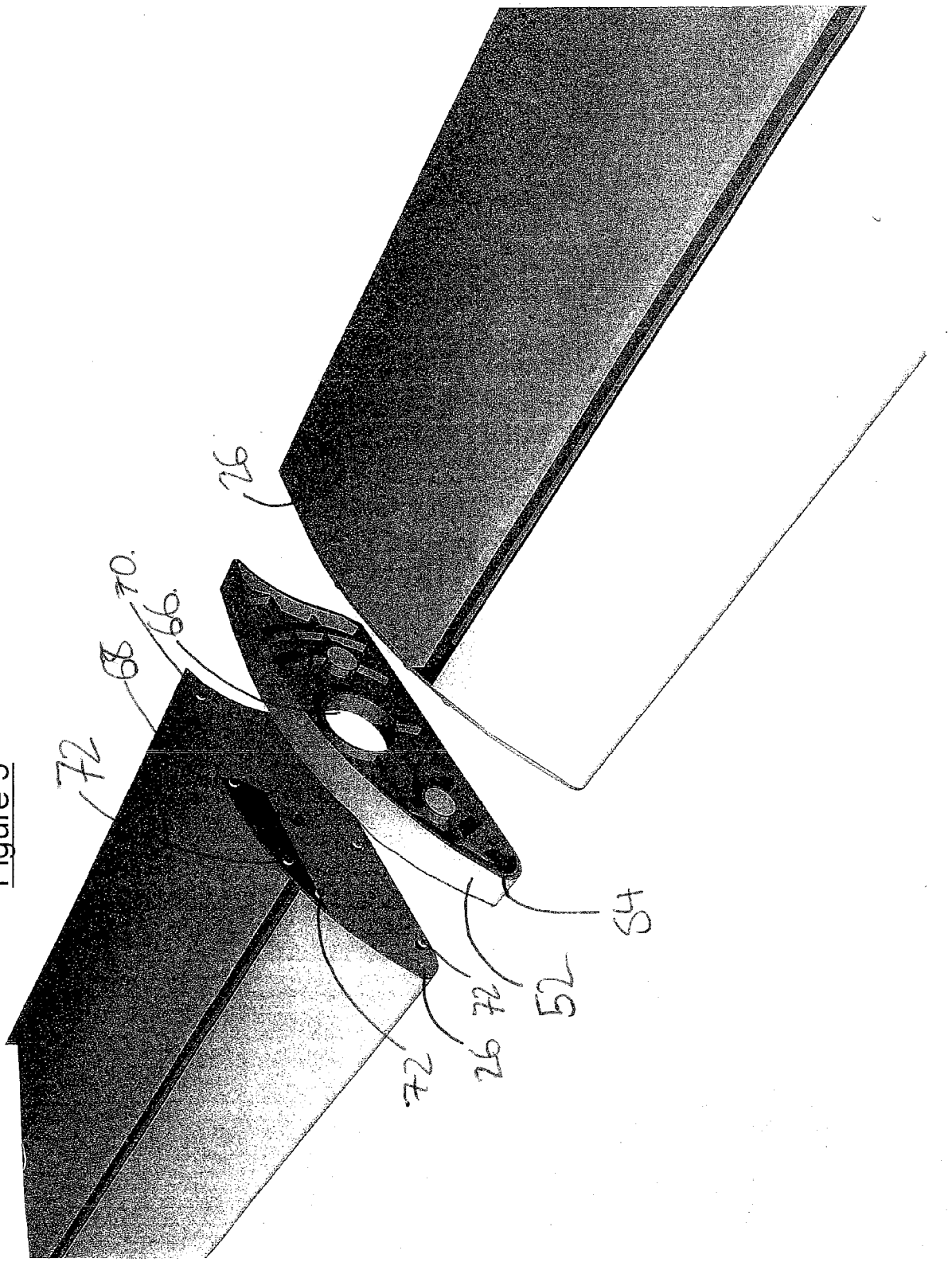


Figure 5



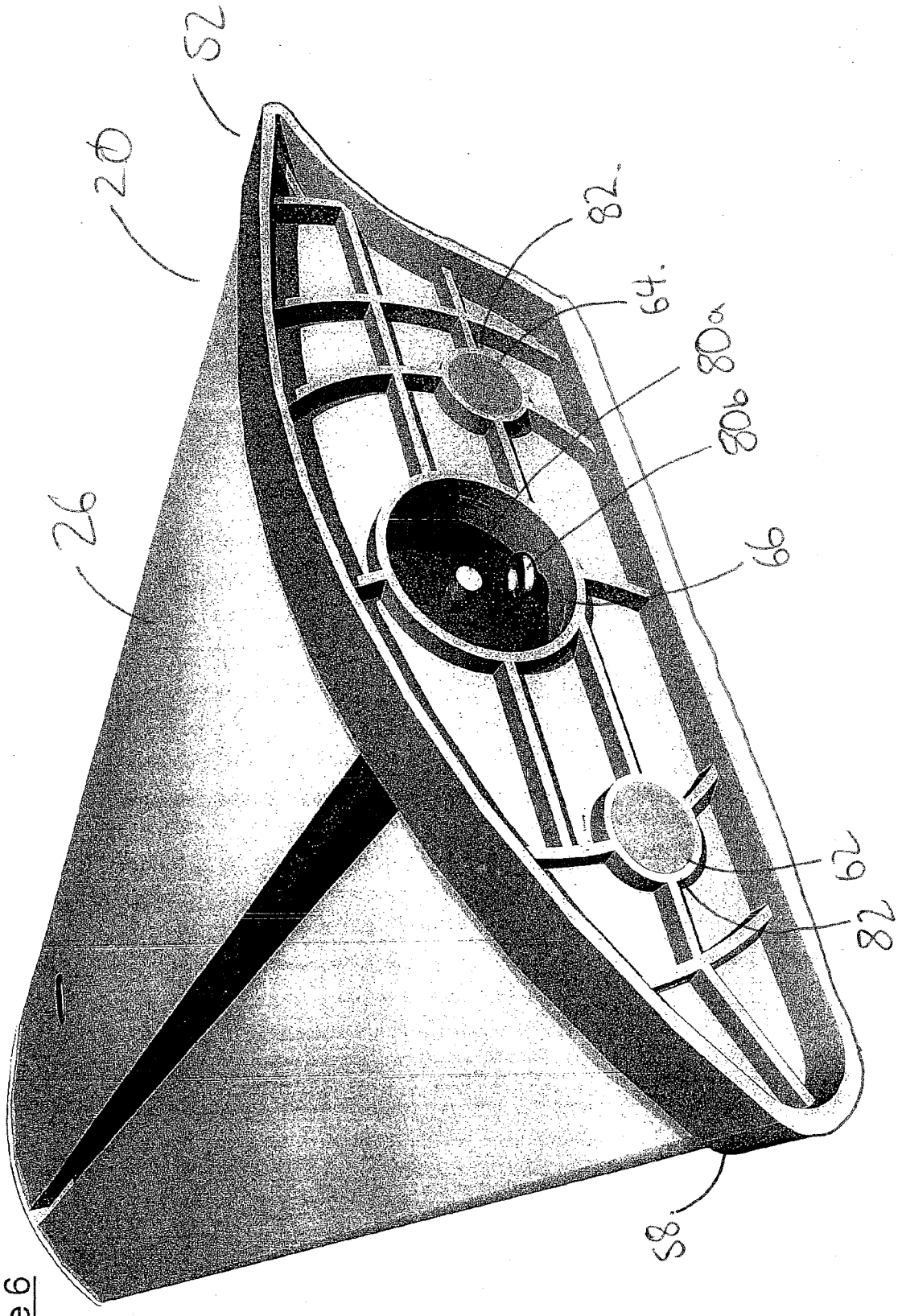


Figure 6

Figure 7

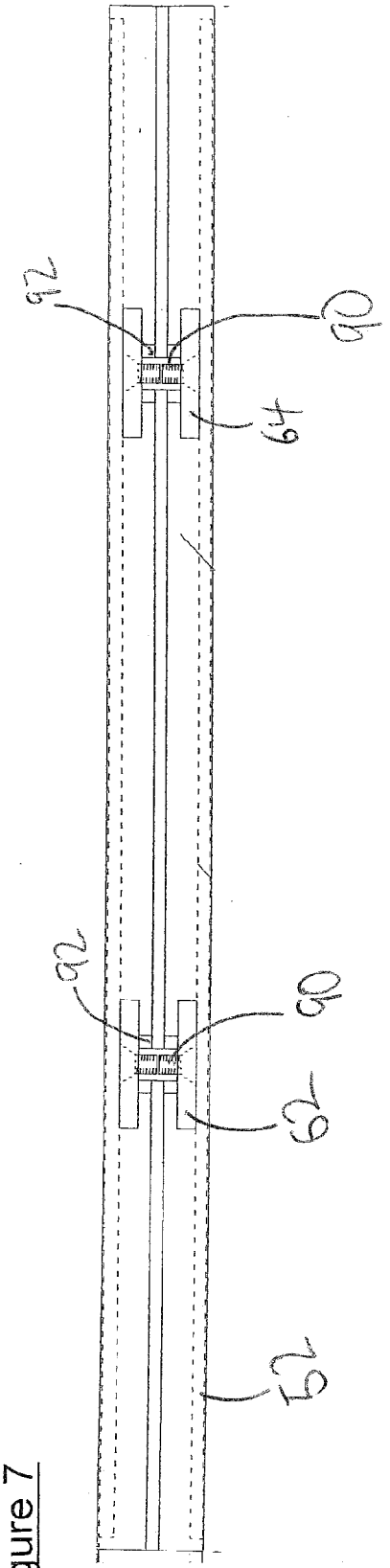


Figure 9

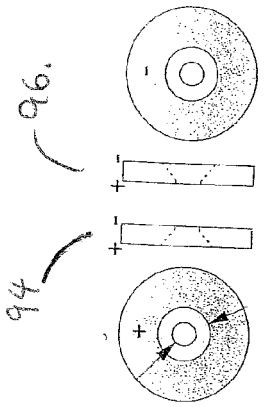


Figure 8

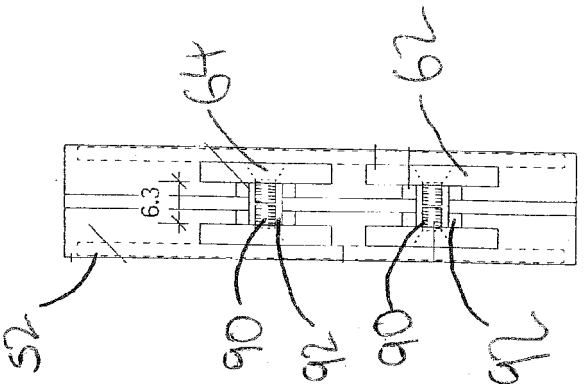


Figure 10

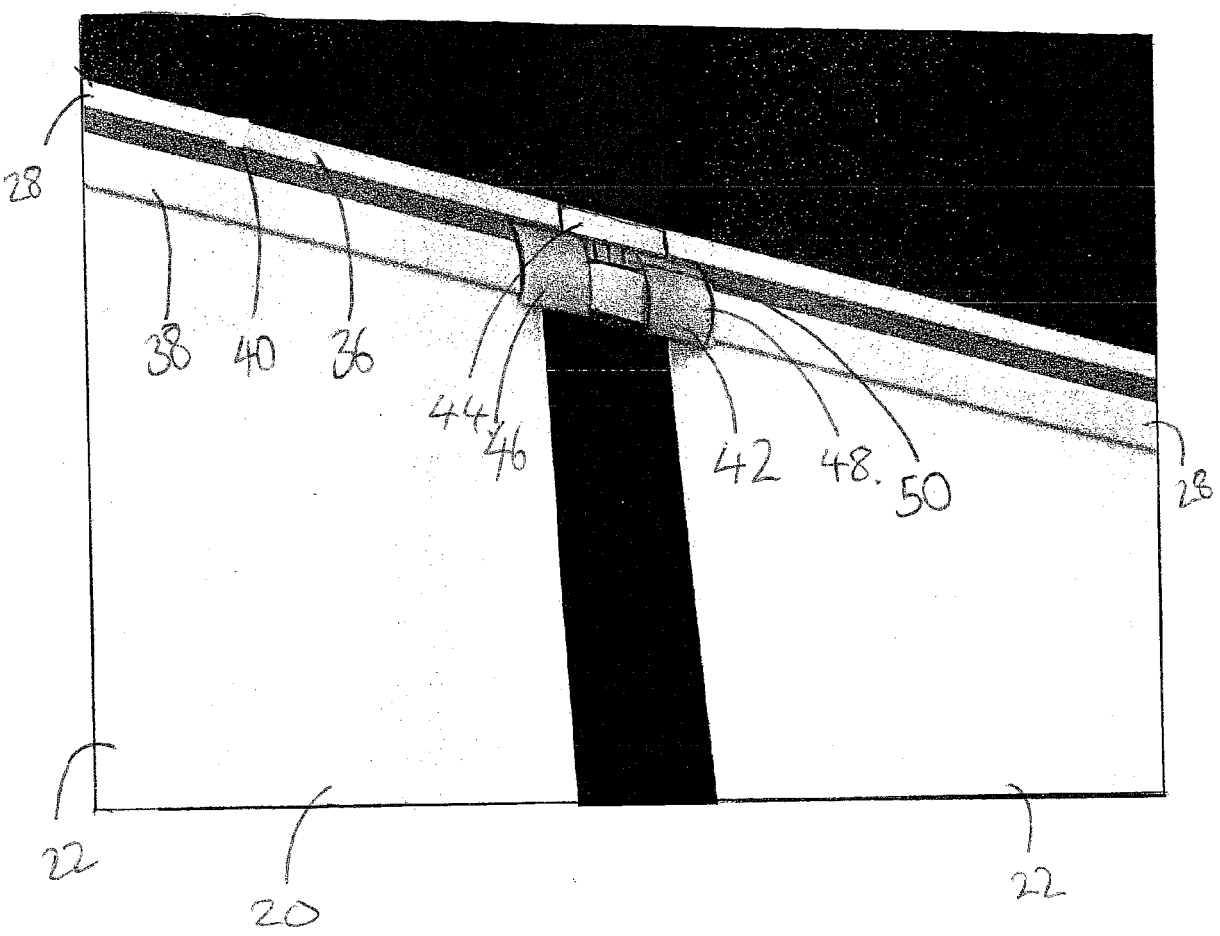
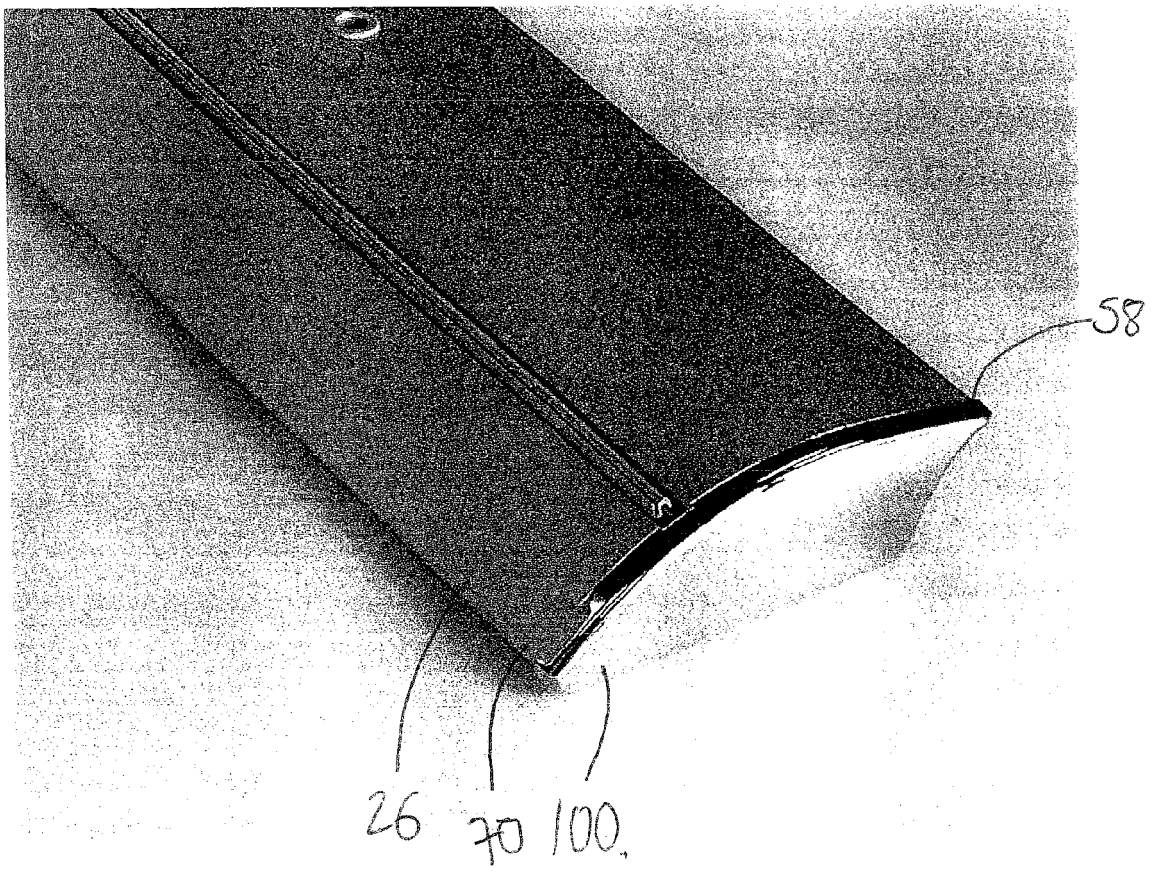


Figure 11



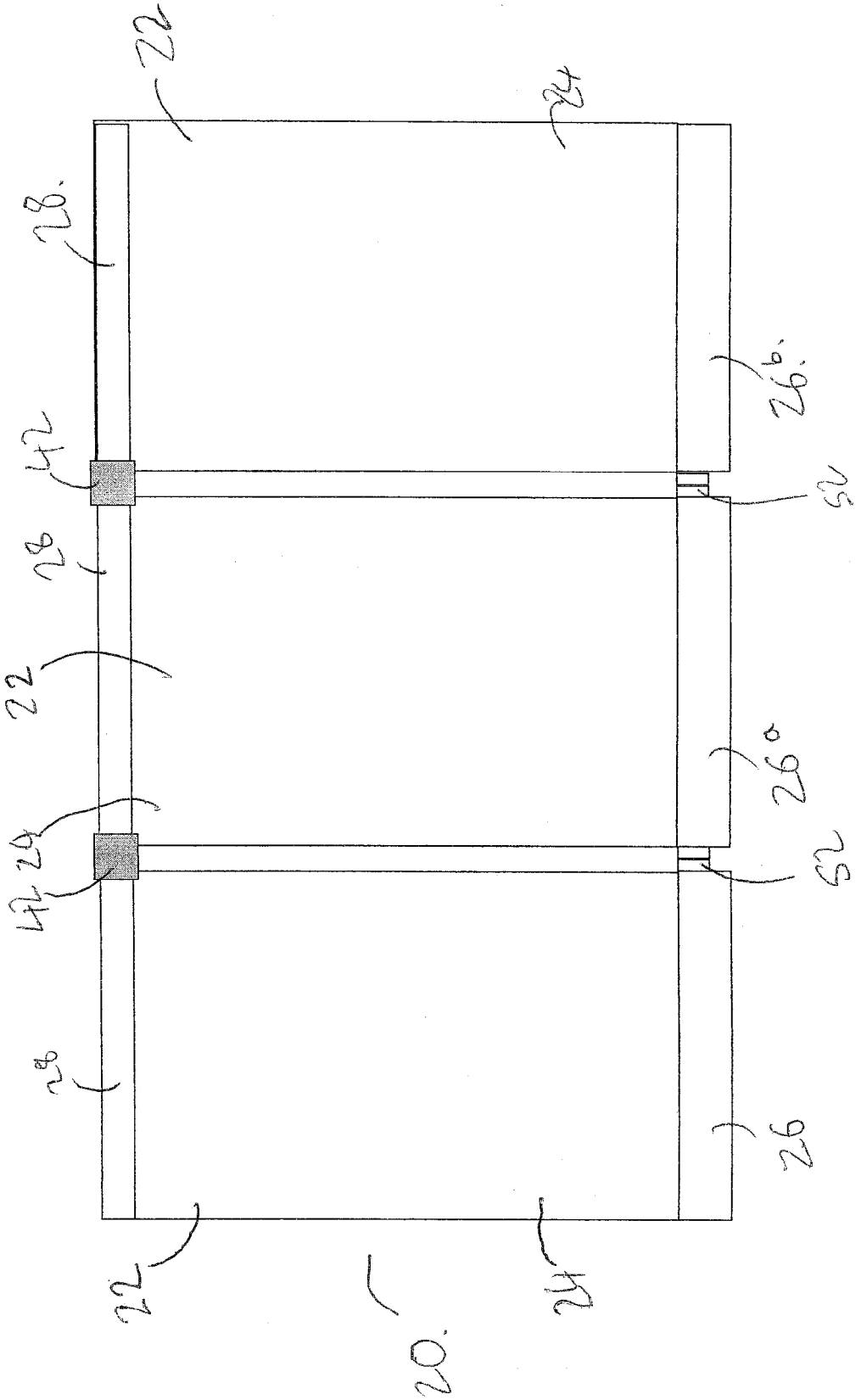


Figure 12

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EUROPEAN SEARCH REPORT

Application Number
EP 09 17 8238

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 A	US 2005/166430 A1 (ZARELIUS CHRISTER [SE]) 4 August 2005 (2005-08-04) * paragraph [0011] - paragraph [0012] * * paragraph [0018] - paragraph [0021] * * paragraph [0032] * * paragraph [0036] - paragraph [0038] * * paragraph [0041] - paragraph [0043] * * paragraph [0052] * * paragraphs [0095], [0096] * * paragraph [0117] - paragraph [0119] * * paragraph [0128] * * paragraph [0140] - paragraph [0141] * * figures 13,14,16,17,18 * -----	1,9, 12-15 2-8,10, 11	INV. G09F11/30 G09F15/00
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A	US 2009/056184 A1 (FRITSCHE MARK A [US] ET AL) 5 March 2009 (2009-03-05) * paragraph [0101] - paragraph [0105] * * paragraph [0107] * * figures 40,42 * -----	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

G09F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	21 April 2010	Lechanteux, Alice

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21-04-2010

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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