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(54) **A CORNER BLOCK FOR A MATTRESS, AND A MATTRESS AND METHOD OF MANUFACTURE
RELATING THERETO**

ECKSTÜCK FÜR EINE MATRATZE SOWIE MATRATZE UND ENTSPRECHENDES
HERSTELLUNGSVERFAHREN

EQUERRE POUR MATELAS, ET MATELAS ET PROCEDE DE FABRICATION CONNEXE

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Description

[0001] The invention relates generally to mattresses. More particularly, in various embodiments, the invention relates to a corner block for providing a reinforced square corner on a mattress, mattresses made with such corner blocks, and methods of manufacturing mattresses employing such corner blocks.

[0002] Conventionally, mattresses generally have unreinforced, rounded corners. When installed into a crib frame, conventional mattress corners make it possible for an infant to injure him/herself by lodging an extremity, such as an arm or leg, between the crib frame and the corner of the crib mattress,

[0003] Various prior art approaches have been employed to reduce the likelihood of this occurring. In some instances, crib bumpers are employed. Typically, crib bumpers are affixed along the periphery of a crib mattress and extend upward and between the mattress and the crib sides. A disadvantage to bumpers is that they often pull away from the corners of the mattress and leave a gap between a mattress corner and a corner of the crib frame. Another prior art approach employs mattresses that extend upward along their periphery to provide an integrated bumper. However, such mattresses can be significantly more complicated to manufacture. US 4,539,723 discloses a corner block comprising first and second legs, each having inner and outer terminal ends, the first leg extending from an inner end of the second leg at an angle to the second leg, both legs including inner and outer surfaces, the inner surfaces of the first and second legs intersecting at a transition section, and the outer surfaces of the first and second legs intersecting at a vertex of an angle. Accordingly, there is a need for an improved structure for a crib mattress,

[0004] The present invention provides a corner block according to the characterising portion of claim 1. The invention addresses the deficiencies in the prior art by, in various embodiments, providing a corner block for squaring a corner of a mattress. In other embodiments, the invention provides mattresses employing the corner block of the invention and methods of manufacturing such mattresses. In some embodiments, a mattress of the invention may be employed as a crib mattress. An advantage of such crib mattresses is that they better fit within the corners of a crib frame to inhibit an infant from lodging an extremity between a corner of the mattress and a corner of the crib frame.

[0005] According to one embodiment, the invention provides a corner block formed from a shape resilient polymer material, such as, polyurethane foam, viscoelastic foam, latex, polyethylene foam, polystyrene, or from cardboard, wood, metal, wire, plastic molded part, polypropylene, and acrylonitrile butadiene styrene (ABS). In one implementation, the polymer material has a density of about 23 kilograms/meter³. In other implementations, the polymer material has a density of between about 18 kilograms/ meter³ and about 28 kilo-

grams/meter³. In other implementations, the polymer material has a density of between about 20 kilograms/ meter³. and about 26 kilograms meter³. In other embodiments, the corner block of the invention may be formed from any suitable material depending on the desired application.

[0006] The corner block includes first and second legs, which extend from a vertex at an angle to each other. Each leg includes an inner (e.g., frame contacting) surface and an outer surface. In one configuration, the outer surfaces of the first and second legs intersect at a substantially right angle. In one embodiment, each leg is about 4½ inches (11.4cm) long, as measured from the intersection of the outer surfaces of the first and second legs to terminal ends of each respective leg. According to a further embodiment, the first and second legs are about 4½ inches (11.4cm) high. According to an alternative embodiment, each leg is about 5 inches (12.7cm) high. In other configurations, the legs of the corner block are between about 4 inches (10.2cm) and about 10 inches (25.4cm) long and between about 4 inches (10.2cm) and about 10 inches (25.4cm) high. In alternate configurations, the legs of the corner block are between about 4 inches (10.2cm) and about 6 inches (15.2cm) long. In further configurations, the legs of the corner block are between about 4 inches (10.2cm) and about 6 inches (15.2cm) high.

[0007] According to another feature, the legs are between about ¼ inch (0.6cm) and about 1½ inches (3.8cm) thick as measured from the inner surface to the outer surface. In some embodiments, the outer surfaces of the first and second legs each include first and second sections. The first section of each leg extends from the vertex at approximately a right angle to each other, and the second section of each leg extends from a terminal end of a respective first section of each leg along an axis angled inward relative to a respective axis of the respective first section.

[0008] According to some configurations, the inner surfaces of the first and second legs intersect at a transition section. According to one feature, the transition section is sized and shaped to interfit around a corner of a coil spring mattress frame. According to another feature, the transition section may be curved to further facilitate such interfitting. In one embodiment, the distance between the vertex of the angle of intersection of the outer surfaces and the apex of the curve of the transition section is between about ¾ inch (1.9cm) and about 1½ inches (3.8cm).

[0009] In some embodiments, a portion of the inner surfaces of the first and second legs may be carved out to receive a corner of a coil spring mattress frame. According to one feature of these embodiments, the carve out may be sized and shaped such that upper and lower parts of the legs may overlap upper and lower sides of a mattress frame, when interfitted onto a corner of the frame to facilitate attaching the corner block to the frame.

[0010] According to another aspect, the invention is

directed to a mattress employing a corner block of the invention. In one embodiment, the mattress includes a coil spring frame, in which the coil springs may or may not be pocketed. The corner blocks are attached to each corner of the frame, either prior or subsequent to attachment of polymer foam material to short ends of the frame. The mattress of the invention may then be further assembled by any suitable approach. According various constructions, the mattress may be of any size, including without limitation, single, double, full, queen, king, California king, or crib size.

[0011] According to a further embodiment, subsequent to attachment of a fire retardant material, the mattress is placed in a compression bag. With the mattress so placed, the compression bag is evacuated to compress it, including compressing the coil springs of the mattress frame. With the mattress so compressed, it is inserted into a final mattress cover. The cover may then be closed by any suitable mechanism. Optionally, the compression bag may be removed prior to closing the mattress cover. In some instances, the compression bag may be made from a water resistant polymer and left on the mattress to shield inner portions of the mattress from inadvertent exposure to fluids during use.

[0012] Other features and advantages of the invention are described below with regard to various illustrative embodiments.

Brief Description of the Drawings

[0013] The invention may be better understood with reference to the appended illustrative drawings in which like reference designations refer to like parts, the various views may not be drawn to scale; and in which:

Figure 1A is a top view of a corner block for providing a reinforced square corner on a mattress according to an illustrative embodiment of the invention;

Figure 1B is an outside perspective view of the corner block of Figure 1A;

Figure 1C is an inside perspective view of the corner block of Figure 1A;

Figure 1D is an inside perspective view of the corner block of Figure 1A including an optional cutout according to another illustrative embodiment of the invention;

Figures 2A-2H depict an illustrative process for making a mattress that includes a corner block of the invention;

Figure 3 depicts an alternative embodiment of the invention; and

Figure 4 depicts a further alternative embodiment of

the invention.

Illustrative Description

[0014] As described above in summary, the invention addresses the deficiencies in the prior art by providing, in various illustrative embodiments, devices, systems and methods relating to forming a substantially square corner on a mattress. According to various implementations, the invention provides a corner block for attaching to an otherwise curved/rounded corner of a mattress frame. One advantage of the corner blocks of the invention is that they may be applied to the corners of conventional mattress frames, without need of changing the process by which the mattress frames are made. Another advantage is that, with the exception of the outer mattress cover (which may need to be formed with square rather than rounded corners) the corner blocks of the invention can be attached to the corners of the mattress frame without need of modifying the other components that cover, surround or otherwise attach to the mattress frame. A further advantage is that the corner blocks of the invention may be attached to the mattress frame at the same time that end foam padding is attached to the short ends of the mattress frame. As mentioned above, another advantage of the invention is that it may be employed with a crib mattress to decrease the likelihood that an infant lodge an extremity between a corner of the mattress and a corner of a crib frame.

[0015] FIGS. 1A-1D show various views of corner block 100 according to an illustrative embodiment of the invention. Referring to those Figures, the end block 100 includes first 102 and second 104 legs. The first leg 102 has an inner end 106 and a terminal end 108. It also has an inner surface 110 and an outer surface 112. The outer surface has first 112a and second 112b sections. Similarly, the second leg 104 has an inner end 114 and a terminal end 116. It also has an inner surface 118 and an outer surface 120. The outer surface has first 120a and second 120b sections.

[0016] The inner surfaces 110 and 118 of the first 102 and second 104 legs, respectively, intersect at a transition section 122. As depicted the transition section 122 may be curved, but this need not be the case. As shown in further detail in FIGS. 2B and 2C, the transition section 122 is sized and shaped to interfit with and cover a rounded or otherwise non-square corner of a mattress frame. In this particular embodiment, the mattress frame is a crib mattress frame. However, suitably sized and shaped corner blocks according to the invention may also be applied to any size mattress frame, for example, including single, double, full, queen, king and California king size mattress frames.

[0017] The outer surfaces 112 and 120 of the first 102 and second 104 legs, respectively, intersect at an angle to each other at a corner/vertex 124. According to the illustrative embodiment, the outer surfaces 112 and 120 of the first 102 and second 104 legs intersect at a sub-

stantially right (i.e., 90 degree) angle to form a substantially square corner 124. In the illustrative embodiment of FIG. 1, the distance 125 between the vertex 124 and an apex 123 of the curved transition section 122 is about 1 inch (2.5cm). However, the distance 125 may have any suitable dimension depending on the size of the particular mattress frame corner with which it is to interfit. For example, in other illustrative embodiments, the distance 125 ranges from about ½ inch (1.3cm) to about 2 inches (5.1cm).

[0018] As shown in FIG. 1A, the first leg 102 of the illustrative corner block 100 has a length 126 of about 4 ½ inches (11.4cm), as measured along the outer surface 112 between the vertex 124 and the terminal end 108. However, in other illustrative embodiments, the length 126 may be any suitable length for any particular mattress frame. In some illustrative embodiments, the length 126 ranges from about 6 inches (15.2cm) to about 12 inches (30.5cm). In other illustrative embodiments, the length 126 ranges from about 4 inches (10.2cm) to about 10 inches (25.4cm). As also shown in FIG. 1A, the first section 112a of the outer surface 112 extends along an axis 128 from the vertex 124. The first section 112a of the illustrative first leg 112 has a length 130 of about 2 inches (5.1cm). However, it may have any suitable length depending on the particular mattress frame corner with which it is sized and shaped to interfit. In one illustrative embodiment, the length 130 is between about 1 inch (2.5cm) and about 6 inches (15.2cm). In other illustrative embodiments, the length 130 ranges from about 1 inch (2.5cm) to about 4 inches (10.2cm). The second section 112b of the outer surface 112 extends from the first section 112a. According to the illustrative embodiment, the second section 112b extends along an axis 132 angled inward from the axis 128 of the first section 112a. However, this need not be the case. According to the illustrative embodiment, the second section 112b has a length 134 of about 2½ inches (6.4cm). However, the second section 112b may be of any suitable length 134 depending on the particular mattress frame corner with which it is sized and shaped to interfit. In one illustrative embodiment, the length 124 ranges from about 1 inch (2.5cm) to about 6 inches (15.2). In other illustrative embodiments, the length 124 ranges from about 1 inch (2.5cm) to about 4 inches (10.2cm).

[0019] The first leg 102, in one implementation, has a width/thickness 136 of between about ¼ inch (0.6cm) and about 4 inches (10.2cm). However, in other implementations, the width 136 is between about ¼ inch (0.6cm) and about 2 inches (5.1cm). According to the illustrative embodiment, the angle of the axis 132 relative to the axis 128 causes the width 136 to vary from about 1 inch (2.5cm) near the inner end 106 of the leg 102 to about ¼ inch (0.6cm) at the terminal end 108 of the leg 102. However, in other illustrative embodiments, the axis 128 may be coaxial with the axis 132, causing the width 136 of the leg 102 to be substantially uniform along its length.

[0020] As shown most clearly in FIGS. 1B-1D, the first

leg 102 has a height 138 of about 5 inches (12.7cm) in the case of the corner block 100 being sized and shaped for interfitting with a corner of an open coil mattress frame, and a height 138 of about 4½ inches (11.4cm) in the case of the corner block 100 being sized and shaped for interfitting with a corner of a pocketed coil mattress frame. However, as in the case of the other dimensions for the corner block 100, the height 138 may be of any suitable measurement, depending on the particular mattress frame corner with which the corner block 100 is sized and shaped to interfit. For example, in other illustrative embodiments, the height 138 is between about 3 inches (7.6cm) and about 12 inches (30.5cm).

[0021] According to the illustrative embodiment, the first 102 and second 104 legs are of similar dimensions, and may or may not be symmetrical. More particularly, the second leg 104 of the illustrative corner block 100 has a length 140 of about 4½ inches (11.4cm), as measured along the outer surface 120 between the vertex 124 and the terminal end 116. However, in other illustrative embodiments, the length 140 may be any suitable length for any particular mattress frame. In some illustrative embodiments, the length 140 ranges from about 6 inches (15.2cm) to about 12 inches (30.5cm). In other illustrative embodiments, the length 140 ranges from about 4 inches (10.2cm) to about 10 inches (25.4cm). As also shown in FIG. 1A, the first section 120a of the outer surface 120 extends along an axis 142 from the vertex 124. The first section 120a of the illustrative first leg 120 has a length 144 of about 2 inches (5.1cm). However, it may have any suitable length depending on the particular mattress frame corner with which it is sized and shaped to interfit. In one illustrative embodiment, the length 144 is between about 1 inch (2.5cm) and about 6 inches (15.2cm). In other illustrative embodiments, the length 144 ranges from about 1 inch (2.5cm) to about 4 inches (10.2cm). The second section 120b of the outer surface 120 extends from the first section 120a. According to the illustrative embodiment, the second section 120b extends along an axis 146 angled inward from the axis 142 of the first section 120a. However, this need not be the case. According to the illustrative embodiment, the second section 120b has a length 148 of about 2½ inches (6.4cm). However, the second section 120b may be of any suitable length 148 depending on the particular mattress frame corner with which it is sized and shaped to interfit. In one illustrative embodiment, the length 148 ranges from about 1 inch (2.5cm) to about 6 inches (15.2cm). In other illustrative embodiments, the length 148 ranges from about 1 inch (2.5cm) to about 4 inches (10.2cm).

[0022] The second leg 104, in one implementation, has a width/thickness 150 of between about ¼ inch (0.6cm) and about 2 inches (5.1cm). However, in other implementations, the width 150 is between about inch (2.5cm) and about 2 inches (5.1cm). According to the illustrative embodiment, the angle of the axis 146 relative to the axis 142 causes the width 150 to vary from about 1 inch (2.5cm) near the inner end 114 of the leg 104 to about

¼ inch (0.6cm) at the terminal end 116 of the leg 104.

[0023] However, in other illustrative embodiments, the axis 146 may be coaxial with the axis 142, causing the width 150 of the leg 104 to be substantially uniform along its length.

[0024] As shown most clearly in FIGS. 1B-1D, the second leg 104 has a height 152 of about 5 inches (12.7cm) in the case of the corner block 100 being sized and shaped for interfitting with a corner of an open coil mattress frame, and a height 252 of about 4½ inches (11.4cm) in the case of the corner block 100 being sized and shaped for interfitting with a corner of a pocketed coil mattress frame. However, as in the case of the other dimensions for the corner block 100, the height 152 may be of any suitable measurement, depending on the particular mattress frame corner with which the corner block 100 is sized and shaped to interfit. For example, in other illustrative embodiments, the height 152 is between about 3 inches (7.6cm) and about 12 inches (30.5cm).

[0025] According to the illustrative embodiment, the inner surfaces 110 and 118 are substantially flat. However, as shown in FIG. 1D, the inner surfaces 110 and 118 may include a cutout 154 to better interfit with a corner of a mattress frame. More particularly, the cutout 154 provides an overhang 156 for extending over a top side of a corner of a mattress frame and an overhang 158 for extending over a bottom side of a corner of a mattress frame. The overhangs 156 and 158 make it easier to attach (e.g., by way of hog rings) the top and bottom of the corner block 100 to the mattress frame.

[0026] According to one illustrative embodiment, the corner block is formed from a polymer foam core. In one implementation, it has a density of about 23 kilograms/m³, and a cell size of between about ¾ millimeter and about 1¼ millimeters. However, the corner block 100 may be made from any material, including, without limitation, any suitable polymer plastic, having sufficient rigidity to maintain the squareness of the intersection 124 of the outer surfaces 112 and 120. A desirable feature of the material of the corner block 100 is also that it has sufficient shape resiliency to return to its substantially square configuration if compressed or otherwise deformed, for example, during packaging and/or shipping.

[0027] In some embodiments, the corner block 100 is formed out of a single piece of material. However, in other embodiments, the legs 102 and 104 may be attached together by any suitable mechanism.

[0028] According to another illustrative embodiment, the invention provides a mattress employing one or more corner blocks of the invention to provide substantially square corners. In other illustrative embodiments, the invention provides a method of manufacturing a mattress employing one or more corner blocks of the invention. Although an illustrative mattress and method of manufacture is described below with respect to Figures 2A-2I in terms of a mattress and a mattress frame, it should be noted that the corner block 100 of the invention may be sized and shaped for use with any suitable mattress and

mattress frame.

[0029] Referring to Figure 2A an end foam 200a is attached to a short end 202a of a coil spring mattress frame 204. In accordance with conventional practices, the attachment is by way of hog rings. As shown in Figure 2B, a corner block 100a of the invention is then interfitted with the corner 206a of the coil spring frame 204, with the first leg 102 overlapping the end foam 200 and the second leg 104 extending along a portion of a long edge 208a of the frame 204. The corner block 100 is then hog ringed in place along the top 102a and bottom 102b of the first leg 102 and along the top 104a and bottom 104b of the second leg 104. As shown in Figure 2C, the same approach is used to attach corner blocks 100b-100d to each of the remaining corners 206b-206d and the end foam 200b to the other short end 202b. As also shown in Figure 2C, the mattress frame 204 with the end foam and corner blocks attached is then placed onto a conventional synthetic fiber pad 210. As shown in Figure 2D, the mattress frame 204 is then wrapped in the fiber pad 210 leaving the end foams 200a and 200b exposed. The fiber pad 210 is secured using a conventional hog ring approach. As shown in Figure 2E, the mattress is then covered on a top surface 212 and both short ends 202a and 202b with a conventional upholstery 214, also secured with hog rings; leaving the long sides 208a and 208b and the bottom of the mattress not covered by the upholstery 214. As shown in Figure 2F, the mattress is then wrapped in a conventional fire retardant material 216, also secured with hog rings, leaving the upholstery 214 exposed at both short ends 202a and 202b.

[0030] As shown in Figure 2G, the mattress is then inserted into a polymer bag 218, which is substantially evacuated to compress the mattress. As shown in Figure 2H, the mattress is then inserted into an outer cover 220 while in a compressed state. The compressed state enables the mattress to be easily inserted into the cover 220, without risk of ripping or otherwise damaging the cover 220. The mattress cover 220 is then closed using any suitable technique, such as stitching and/or gluing.

[0031] The evacuation bag 218 may be unsealed subsequent to inserting the mattress into the cover 220. In some embodiments, the bag 218 is unsealed and removed prior to closing the cover 220. In other embodiments, the bag 218 is unsealed prior to closing the cover 220, but left inside the cover to provide added protection for core components of the mattress, for example, against inadvertent exposure to bodily fluids during use. In further embodiments, the bag 218 is left sealed while the cover 220 is being closed and is either unsealed subsequent to closure or left to slowly inflate over time due, for example, to porosity of the bag 218 material/construction.

[0032] Turning now to Figure 3, an alternative embodiment of the invention is depicted wherein a side piece, typically a header or footer piece, is provided that includes two corner block elements. In particular, Figure 3 depicts a corner block 300 that includes two corner blocks

302 and 304. The corner blocks 302 and 304 are joined by a bridge 308 that connects the two corner blocks 302 and 304. Each corner block 302 and 304 includes an interior curved surface 312 and a side arm piece 310. In the embodiment depicted in Figure 3 the corner block assembly 300 may be slide over a side of the mattress, thereby providing a corner block at two of the mattress corners. The dimensions of the corner block assembly 300 may vary according to the application, and in one embodiment the corner block assembly 300 may have dimensions suitable for allowing the corner block assembly 300 to slide over the head or foot of a mattress. However, in alternate embodiments, the corner block assembly 300 may have dimensions suitable for allowing the corner block assembly 300 to slide over the side of a mattress thereby providing a corner block at the head and the foot of the mattress. The corner block assembly 300 may be made of materials such as those used with the corner block assembly embodiments depicted in Figures 1 and 2. Similarly, the wall thickness and height of the corner blocks 302 and 304 may be similar to the wall thickness and height of the corner block depicted in views 1A and 1B. Optionally, the corner blocks 302 and 304, as well as the arm 308 and the side arms 310 may include a lip, similar to the lip depicted in Figure 1D. This optional lip allows for the corner block assembly 300 to engage the upper and lower surfaces of the mattress.

[0033] Once engaged against the mattress, the mattress may be assembled as depicted in Figures 2A-2F and optionally be compressed as also shown in the figures.

[0034] Turning to Figure 4, a further alternative embodiment of the corner block is depicted. In particular, a corner block assembly 320 is shown in Figure 4 having four corner block elements 322, 324, 328 and 330. These corner block elements are joined by bridge arms 334, 338, 340 and 342. The corner blocks and the bridge arms form a peripheral sidewall having an interior cavity 332 into which a mattress may be inserted. In this embodiment, the corner block assembly 320 provides four corner blocks that may be attached by a single assembly 320 to the mattress. Once attached, the mattress may be assembled as depicted in Figures 2A-2D. As described above, the corner block assemblies as well as the sidewalls 334, 338, 340 and 342 may include lip elements that butt against and optionally frictionally engage with the upper surface and lower surface of the mattress. The corner block assembly 320 may be made of the materials described above with reference to the corner block assembly shown in Figures 1A and B and the wall thickness and height of the corner block assembly may be similar to the wall thickness and height of the corner block illustrated in Figures 1A and 1B. The sidewalls 334, 338, 340 and 342 may be made of any suitable material and may have optional cutouts (not shown) within the sidewall to control stiffness of the sidewalls and to reduce the cost of materials.

[0035] It should be noted that additional modifications

can be made to the illustrative embodiments without departing from the subject invention as defined by the following claims. By way of example, the corner block of the invention may be made in any suitable dimensions, from any suitable materials. Additionally, mattresses of the invention may also be of any suitable dimensions and employ any suitable mattress frame, coil spring or not, pocketed or not. Further the methods of manufacture may employ any steps including the step of locating at least one corner block of the invention in a corner of a mattress, regardless of at what point in the fabrication process the corner block is included and regardless of whether the corner block is located directly next to the mattress frame, on top of an intervening layer between the corner block and the mattress frame, covered by a subsequent layer/material or located in an exposed fashion on an outer surface of a mattress corner. Also, the corner block of the invention may or may not be affixed to the corner of the mattress or mattress frame.

Claims

1. A corner block (100) comprising:

first (102) and second (104) legs each having inner (106, 114) and outer terminal (108, 116) ends, the first leg (102) extending from an inner end (114) of the second leg (104) at an angle to the second leg, both legs including inner (110, 118) and outer surfaces (112, 120), the inner surfaces (110, 118) of the first and second legs intersecting at a transition section (122), the outer surfaces (110, 118) of the first and second legs intersecting at a vertex (124) of an angle,

characterised in that

the corner block is for squaring a corner of a mattress;

the transition section (122) is curved to interfit around a corner of a mattress frame; and

the first (102) and second legs (104) each have a height of between 4 inches (10cm) and 10 inches (25cm), and a length of between 4 inches (10cm) and 10 inches (25cm) measured from the vertex (124) to the terminal end (108, 116) of a respective leg along the outer surface of the respective leg.

2. The corner block of claim 1, wherein the corner block (100) is formed from a shape resilient polymer material.
3. The corner block of claim 1, wherein the angle is about 90 degrees.
4. The corner block of claim 1, wherein one or both of the length or height is between 4 inches (10cm) and

6 inches (15cm).

5. The corner block of claim 2, wherein the polymer material has a density of between about 18 kilograms/meter³ and about 28 kilograms/meter³.
6. The corner block of claim 1, wherein the first (102) and second (104) legs are formed integrally with each other.
7. The corner block of claim 1 having a distance from a vertex of the angle where the outer surfaces (112, 120) of the first (102) and second (104) legs intersect and an apex of the curved transition section (122) being between 1/2 inch (12.5mm) and 2 inches (5cm) and preferably between 1 inch (25mm) and 2 inches (5cm).
8. The corner block of claim 1, wherein the first (102) and second (104) legs have a thickness of between 1/4 inch (6.25mm) and 2 inches (5cm) and preferably between 1/2 inch (12.5mm) and 1 inch (25mm).
9. The corner block of claim 1, wherein the first (102) and second (104) legs have a thickness that decreases from the inner end (106, 114) of each of the legs to the terminal end (108, 116) of each of the legs.
10. The corner block or claim 1, wherein the outer surfaces (112, 120) of the first and second legs (102, 104) each include first (112a, 120a) and second (112b, 120b) sections, the first section (112a, 120a) of each leg extends from the vertex (124) at approximately a right angle to each other, and the second section (112b, 120b) of each leg extends from a terminal end of a respective first section (112a, 120a) of each leg along an axis angled inward relative to a respective axis of the respective first section.
11. The corner block of claim 1, wherein the inner surfaces (110, 118) of the first and second legs (102, 104) include a carved out portion sized and shaped to interfit over a corner of a mattress frame.
12. The corner block of claim 1, wherein the block (100) comprises a material selected from the group consisting of polyurethane, polystyrene, polymer, wood, metal, polyurethane foam, visco-elastic foam, latex, polyethylene foam, polystyrene, cardboard, cellulose, wood, wire, plastic molded part, polypropylene, and acrylonitrile butadiene styrene (ABS).
13. A mattress comprising:
 - a mattress frame; and
 - at least one corner block (100) according to any previous claim.

14. A method of manufacturing a mattress according to claim 13 comprising:

attaching a corner block (100) to a curved corner of a mattress frame, and
covering the mattress including the corner block (100) with a mattress upholstery,

characterised by

the corner block being curved to interfit around the curved corner and for transforming the curved corner into a substantially square corner.

15. The mattress of claim 13 comprising a mattress upholstery for covering the mattress.

Patentansprüche

1. Eckblock (100), der Folgendes umfasst:

einen ersten (102) und einen zweiten (104) Schenkel, mit jeweils einem inneren (106, 114) und einem äußeren (108, 116) Abschlussende, wobei der erste Schenkel (102) sich von einem inneren Ende (114) des zweiten Schenkels (104) in einem Winkel zum zweiten Schenkel erstreckt, wobei beide Schenkel eine Innenseite (110, 118) und eine Außenseite (112, 120) umfassen, wobei sich die Innenseiten (110, 118) des ersten und des zweiten Schenkels an einem Übergangsabschnitt (122) schneiden und sich die Außenseiten (110, 118) des ersten und des zweiten Schenkels an einem Scheitel (124) eines Winkels schneiden,

dadurch gekennzeichnet, dass

der Eckblock zum Rechtwinkligmachen einer Ecke einer Matratze vorgesehen ist;
der Übergangsabschnitt (122) gerundet ist, um um eine Ecke eines Matratzenrahmens herum zu passen;
und
der erste (102) und der zweite Schenkel (104) jeweils eine Höhe von zwischen 4 Zoll (10 cm) und 10 Zoll (25 cm) und eine Länge von zwischen 4 Zoll (10 cm) und 10 Zoll (25 cm), gemessen vom Scheitel (124) zum Abschlussende (108, 116) eines jeweiligen Schenkels entlang der Außenseite des jeweiligen Schenkels haben.

2. Eckblock nach Anspruch 1, wobei der Eckblock (100) aus einem formelastischen Polymermaterial geformt ist.
3. Eckblock nach Anspruch 1, wobei der Winkel ungefähr 90 Grad beträgt.

4. Eckblock nach Anspruch 1, wobei die Länge und/oder die Höhe zwischen 4 Zoll (10 cm) und 6 Zoll (15 cm) betragen.
5. Eckblock nach Anspruch 2, wobei das Polymermaterial eine Dichte von zwischen ungefähr 18 Kilogramm/Meter³ und ungefähr 28 Kilogramm/Meter³ hat.
6. Eckblock nach Anspruch 1, wobei der erste (102) und der zweite (104) Schenkel einstückig miteinander geformt sind.
7. Eckblock nach Anspruch 1, der einen Abstand von einem Scheitel des Winkels, wo sich die Außenseiten (112, 120) des ersten (102) und des zweiten (104) Schenkels schneiden, und einem Scheitel des gerundeten Übergangsabschnitts (122) hat, der zwischen 1/2 Zoll (12,5 mm) und 2 Zoll (5 cm) und vorzugsweise zwischen 1 Zoll (25 mm) und 2 Zoll (5 cm) beträgt.
8. Eckblock nach Anspruch 1, wobei der erste (102) und der zweite (104) Schenkel eine Dicke von zwischen 1/4 Zoll (6,25 mm) und 2 Zoll (5 cm) und vorzugsweise zwischen 1/2 Zoll (12,5 mm) und 1 Zoll (25 mm) haben.
9. Eckblock nach Anspruch 1, wobei der erste (102) und der zweite (104) Schenkel eine Dicke haben, die jeweils vom inneren Ende (106, 114) des Schenkels zum Abschlussende (108, 116) des Schenkels hin abnimmt.
10. Eckblock nach Anspruch 1, wobei die Außenseiten (112, 120) des ersten und des zweiten Schenkels (102, 104) jeweils einen ersten (112a, 120a) und einen zweiten (112b, 120b) Abschnitt umfassen, wobei sich die ersten Abschnitte (112a, 120a) der Schenkel jeweils vom Scheitel (124) ungefähr im rechten Winkel zueinander erstrecken und sich die zweiten Abschnitte (112b, 120b) der Schenkel jeweils von einem Abschlussende eines jeweiligen ersten Abschnitts (112a, 120a) der Schenkel entlang einer gegenüber einer jeweiligen Achse des jeweiligen ersten Abschnitts nach innen geneigten Achse erstrecken.
11. Eckblock nach Anspruch 1, wobei die Innenseiten (110, 118) des ersten und des zweiten Schenkels (102, 104) einen ausgeschnitzten Anteil umfassen, der dazu bemessen und gestaltet ist, über eine Ecke eines Matratzenrahmens hinüber zu passen.
12. Eckblock nach Anspruch 1, wobei der Block (100) ein aus der aus Polyurethan, Polystyrol, Polymer, Holz, Metall, Polyurethanschaum, viskoelastischem Schaum, Latex, Polyethylenschaum, Polystyrol,

Pappe, Zellulose, Holz, Draht, geformtem Kunststoffteil, Polypropylen und Acrylnitril-Butadien-Styrol (ABS) bestehenden Gruppe gewähltes Material umfasst.

13. Matratze, die Folgendes umfasst:

einen Matratzenrahmen; und
mindestens einen Eckblock (100) nach einem der vorangehenden Ansprüche.

14. Verfahren des Herstellens einer Matratze nach Anspruch 13, das Folgendes umfasst:

Anbringen eines Eckblocks (100) an einer gerundeten Ecke eines Matratzenrahmens; und
Beziehen der Matratze mit dem Eckblock (100) mit einem Matratzenpolster,

dadurch gekennzeichnet, dass:

der Eckblock gerundet ist, um um die gerundete Ecke herum zu passen und um die gerundete Ecke in eine im Wesentlichen rechtwinklige Ecke umzuwandeln.

15. Matratze nach Anspruch 13, umfassend ein Matratzenpolster zum Beziehen der Matratze.

Revendications

1. Équerre (100) comportant :

un premier (102) et un second (104) montants ayant chacun des extrémités intérieures (106, 114) et terminales extérieures (108, 116), le premier montant (102) s'étendant depuis une extrémité intérieure (114) du second montant (104) au niveau d'un angle par rapport au second montant, les deux montants comprenant des surfaces intérieures (110, 118) et extérieures (112, 120), les surfaces intérieures (110, 118) du premier montant et du second montant se croisant au niveau d'une section de transition (122), les surfaces extérieures (110, 118) du premier montant et du second montant se croisant au niveau d'un sommet (124) d'un angle,

caractérisée en ce que

l'équerre a pour objet de rendre droit un coin d'un matelas ;

la section de transition (122) est courbe pour s'adapter mutuellement autour d'un coin d'un cadre de matelas ; et

le premier (102) et le second (104) montants ont chacun une hauteur située entre 4 pouces (10 cm) et 10 pouces (25 cm), et une longueur située entre 4 pou-

- ces (10 cm) et 10 pouces (25 cm) que l'on mesure depuis le sommet (124) jusqu'à l'extrémité terminale (108, 116) d'un montant respectif le long de la surface extérieure du montant respectif.
2. Équerre selon la revendication 1, dans laquelle l'équerre (100) est formée à partir d'un matériau polymère élastique de forme. 5
 3. Équerre selon la revendication 1, dans laquelle l'angle est environ de 90 degrés. 10
 4. Équerre selon la revendication 1, dans laquelle une ou les deux parmi la longueur ou la hauteur mesure entre 4 pouces (10 cm) et 6 pouces (15 cm). 15
 5. Équerre selon la revendication 2, dans laquelle le matériau polymère a une densité située entre environ 18 kilogrammes/mètre³ et environ 28 kilogrammes/mètre³. 20
 6. Équerre selon la revendication 1, dans laquelle le premier (102) et le second (104) montants sont formés d'une seule pièce l'un avec l'autre. 25
 7. Équerre selon la revendication 1, ayant une distance depuis un sommet de l'angle où les surfaces extérieures (112, 120) du premier (102) et du second (104) montants se croisent et une pointe de la section de transition courbe (122) étant située entre 1/2 pouce (12,5 mm) et 2 pouces (5 cm) et de préférence entre 1 pouce (25 mm) et 2 pouces (5 cm). 30
 8. Équerre selon la revendication 1, dans laquelle le premier (102) et le second (104) montants ont une épaisseur située entre 1/4 pouce (6,25 mm) et 2 pouces (5 cm) et de préférence entre 1/2 pouce (12,5 mm) et 1 pouce (25 mm). 35
 9. Équerre selon la revendication 1, dans laquelle le premier (102) et le second (104) montants ont une épaisseur qui diminue depuis l'extrémité intérieure (106, 114) de chacun des montants jusqu'à l'extrémité terminale (108, 116) de chacun des montants. 40
 10. Équerre selon la revendication 1, dans laquelle les surfaces extérieures (112, 120) du premier et du second montants (102, 104) comprennent chacune des premières (112a, 120a) et secondes (112b, 120b) sections, la première section (112a, 120a) de chaque montant s'étend depuis le sommet (124) en approximativement un angle droit l'une par rapport à l'autre, et la seconde section (112b, 120b) de chaque montant s'étend depuis une extrémité terminale d'une première section respective (112a, 120a) de chaque montant le long d'un axe en angle vers l'intérieur par rapport à un axe respectif de la première section respective. 45 50 55
 11. Équerre selon la revendication 1, dans laquelle les surfaces intérieures (110, 118) du premier et du second montants (102, 104) comprennent une partie découpée dont la dimension et la forme lui permettent de s'adapter mutuellement sur un coin d'un cadre de matelas. 5
 12. Équerre selon la revendication 1, dans laquelle l'équerre (100) comporte un matériau sélectionné dans le groupe constitué par du polyuréthane, du polystyrène, du polymère, du bois, du métal, de la mousse de polyuréthane, de la mousse viscoélastique, du latex, de la mousse de polyéthylène, du polystyrène, du carton, de la cellulose, du bois, du fil métallique, une pièce de plastique moulé, du polypropylène, et de l'acrylonitrile-butadiène-styrène (ABS). 10
 13. Matelas comportant : 20
 - un cadre de matelas ; et
 - au moins une équerre (100) selon l'une quelconque des revendications précédentes.
 14. Procédé de fabrication d'un matelas selon la revendication 13 comportant : 25
 - attacher une équerre (100) sur un coin courbe d'un cadre de matelas, et
 - recouvrir le matelas y compris l'équerre (100) d'une garniture de matelas, 30

caractérisé par

l'équerre étant courbe pour s'adapter mutuellement autour du coin courbe et pour transformer le coin courbe en un coin sensiblement droit. 35
 15. Matelas selon la revendication 13 comportant une garniture de matelas destinée à recouvrir le matelas. 40

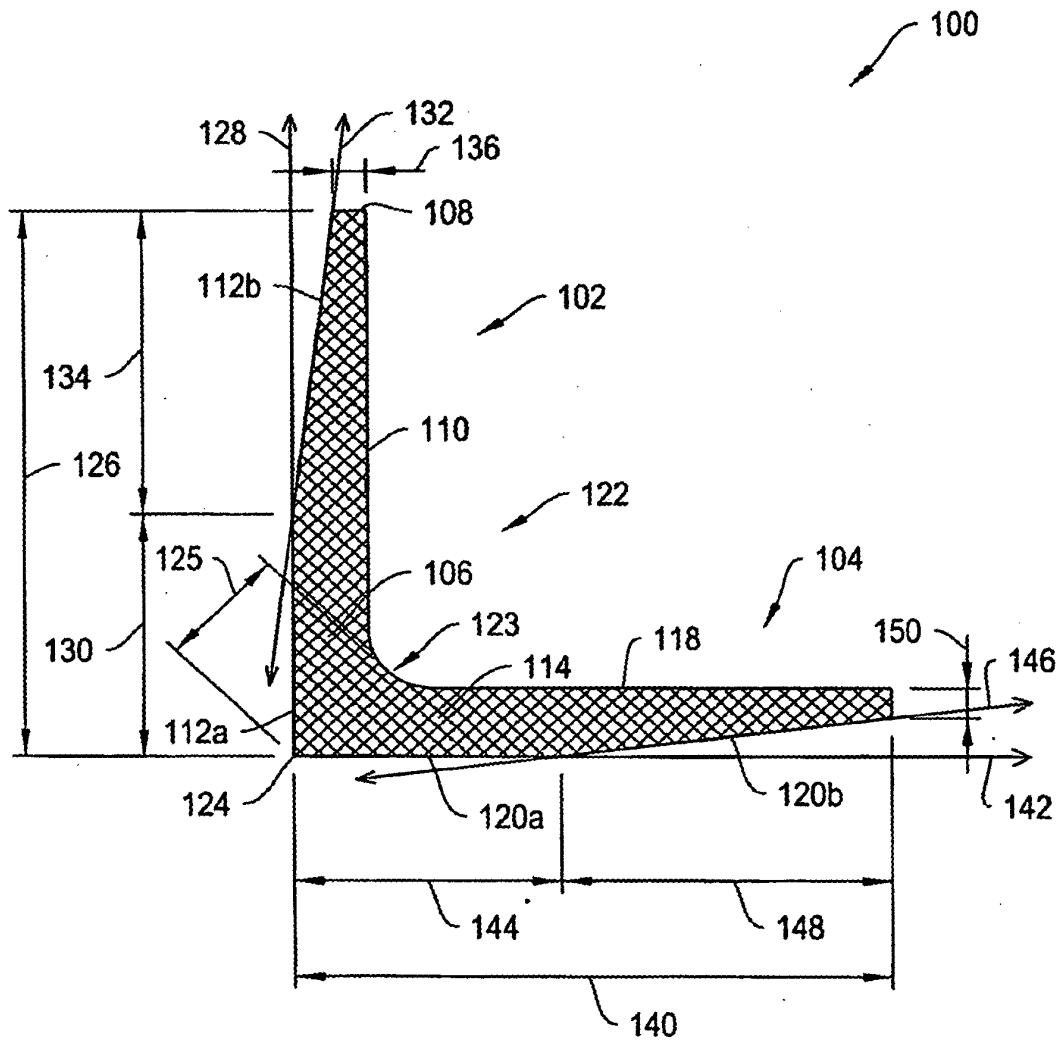


FIGURE 1A

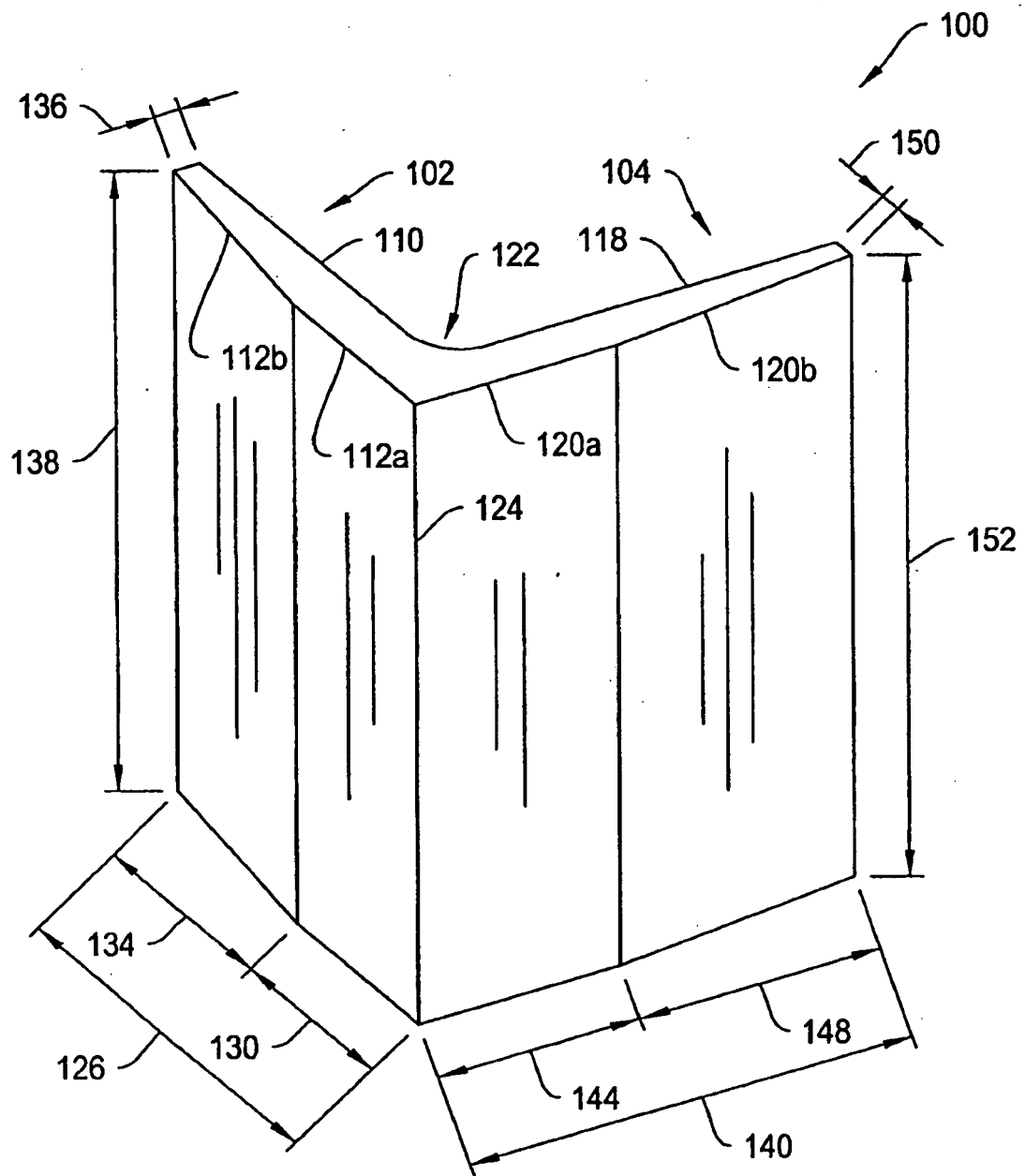


FIGURE 1B

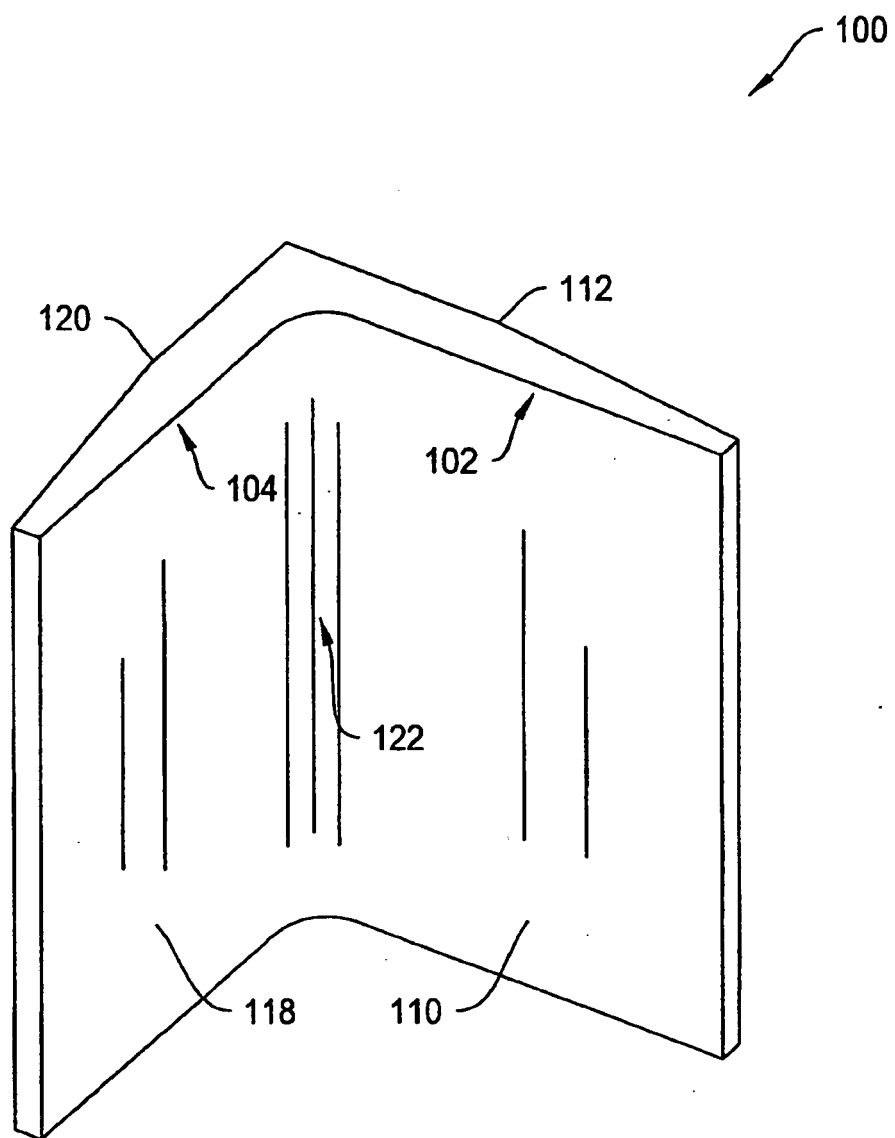


FIGURE 1C

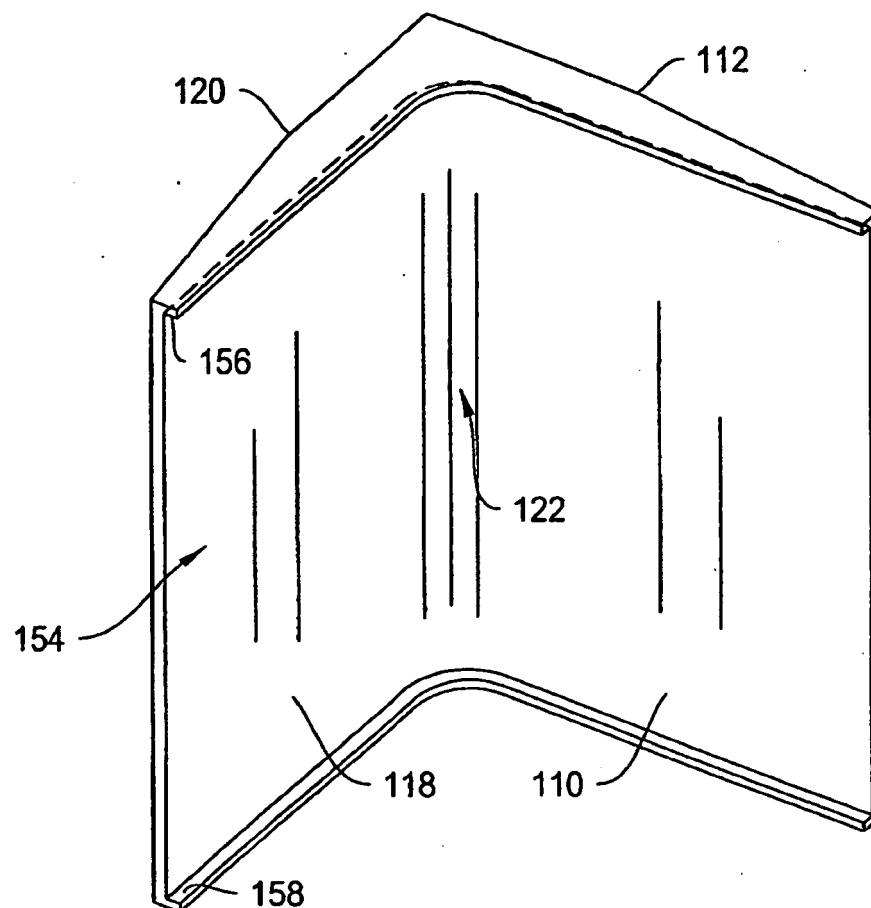


FIGURE 1D

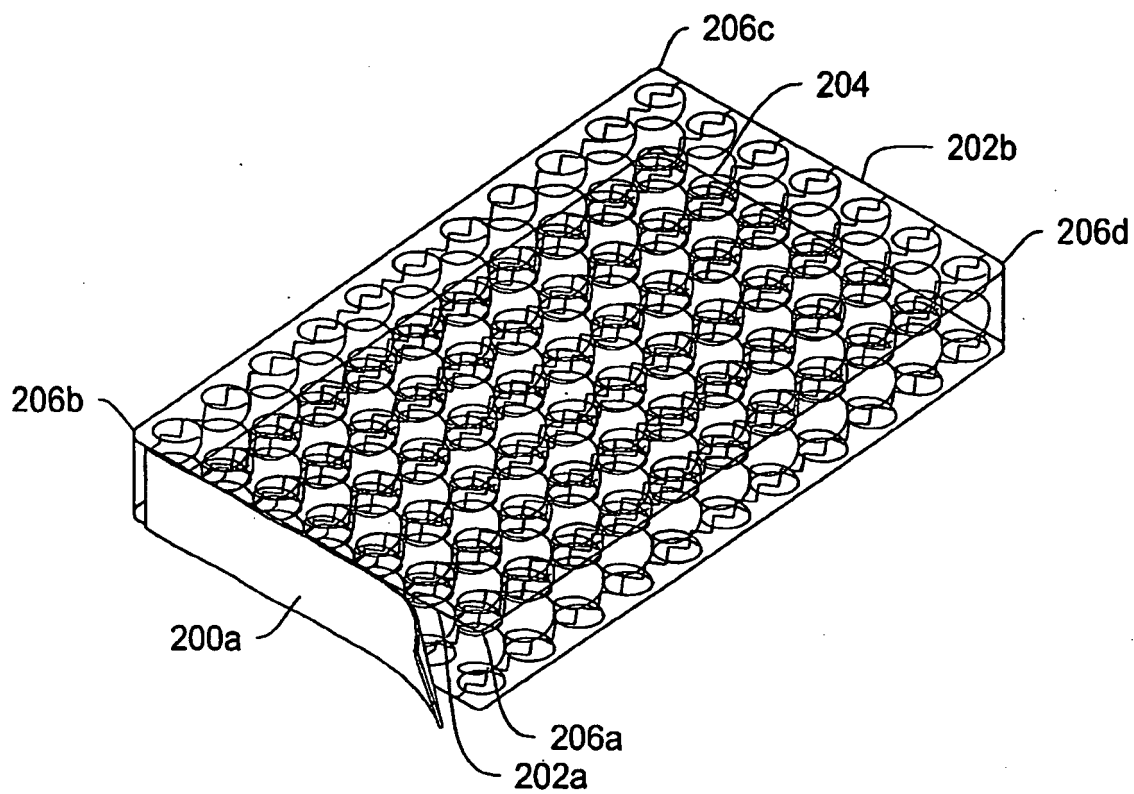


FIGURE 2A

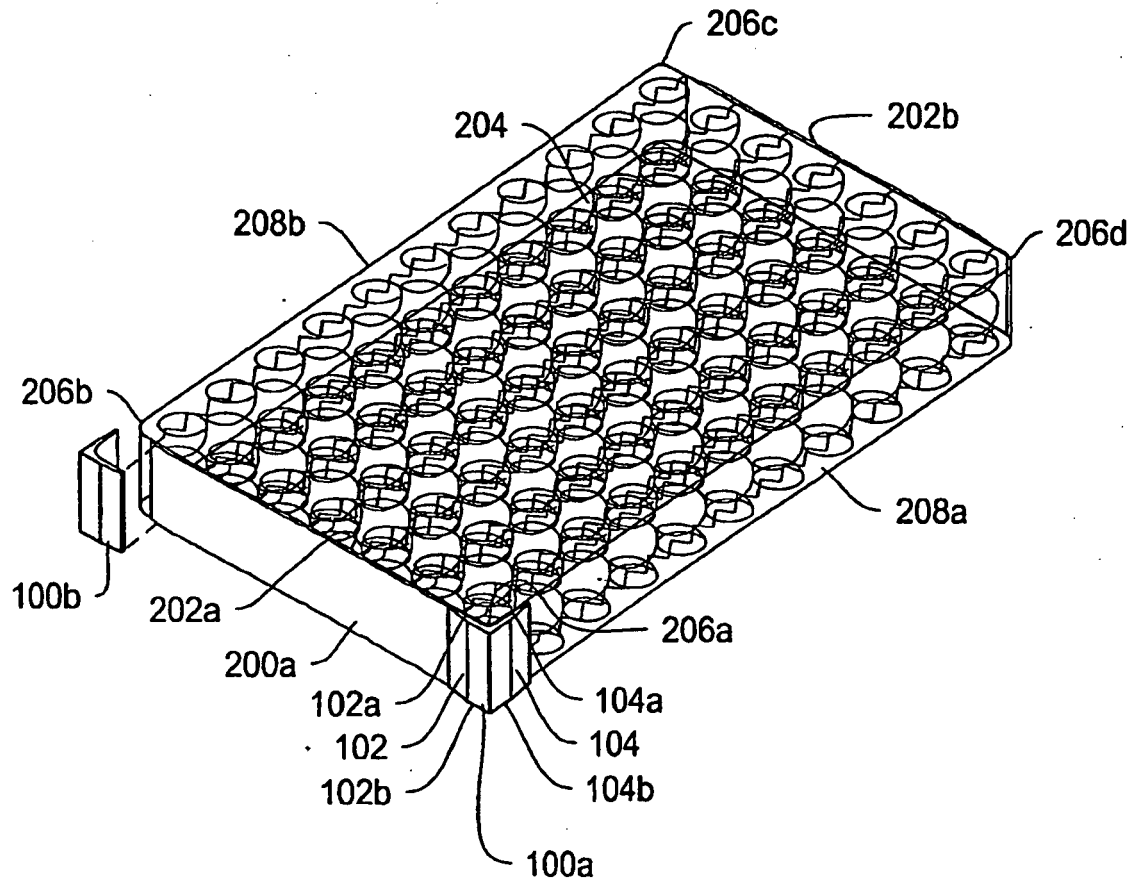


FIGURE 2B

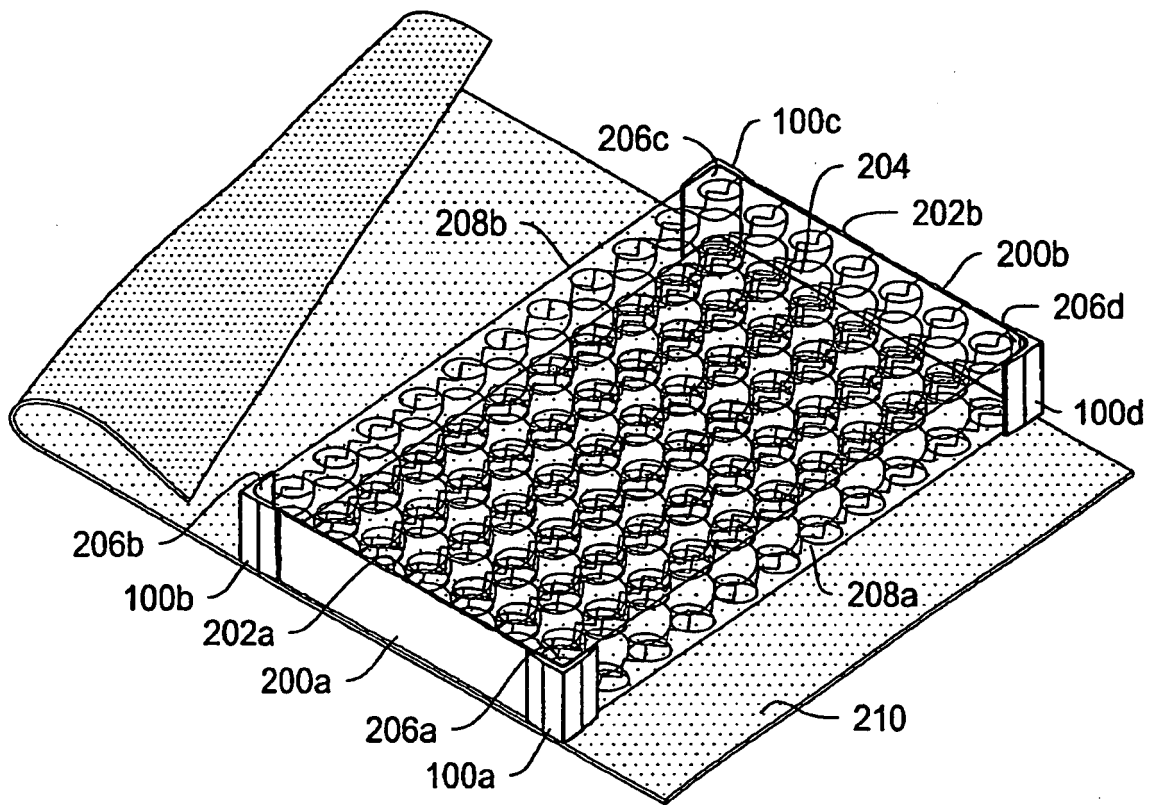


FIGURE 2C

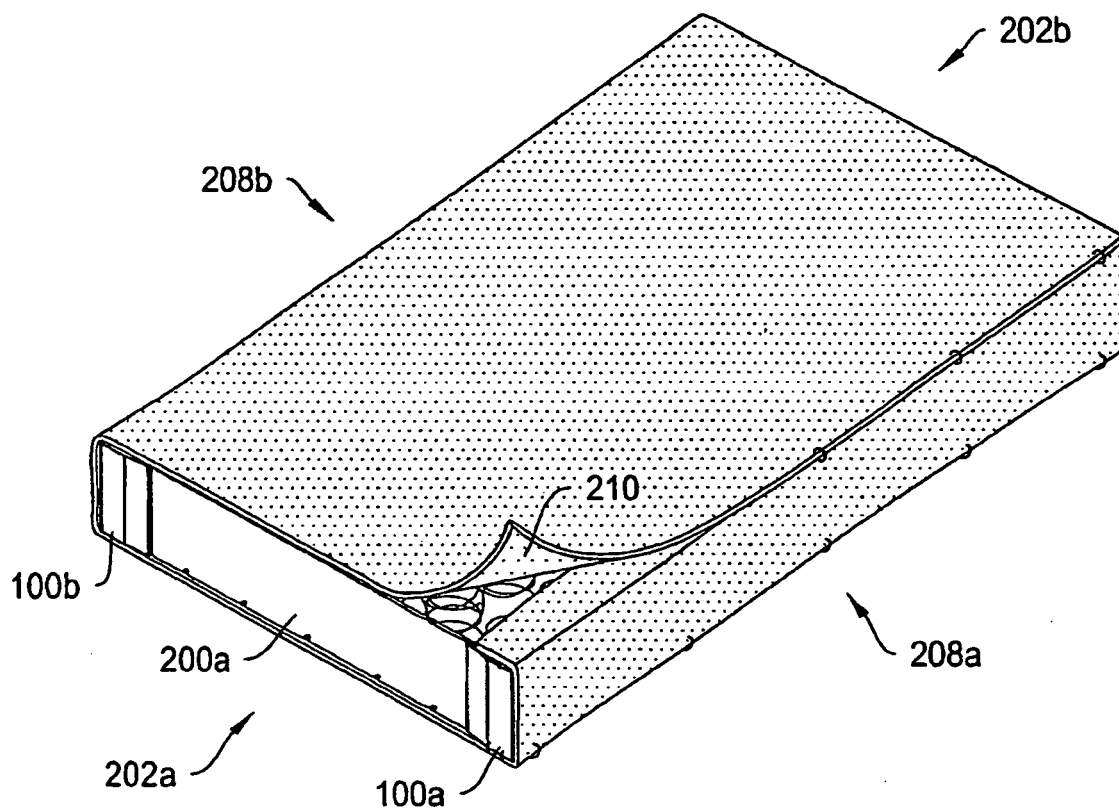


FIGURE 2D

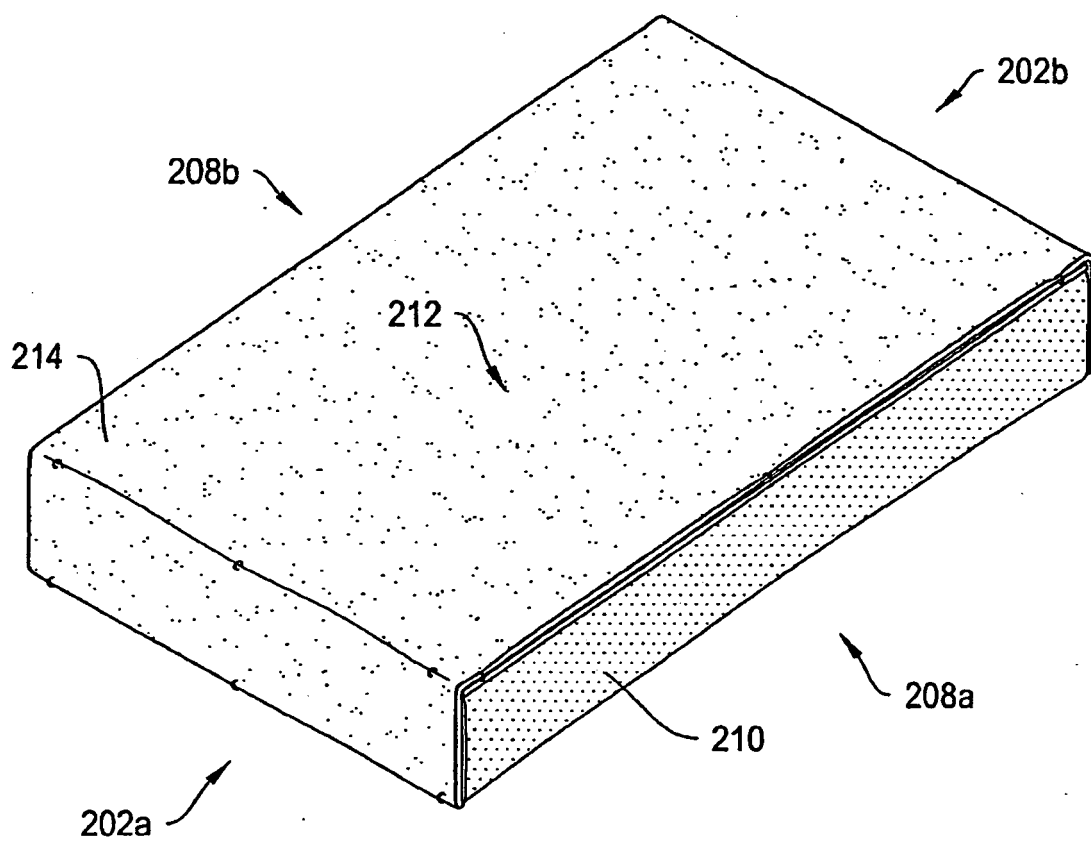


FIGURE 2E

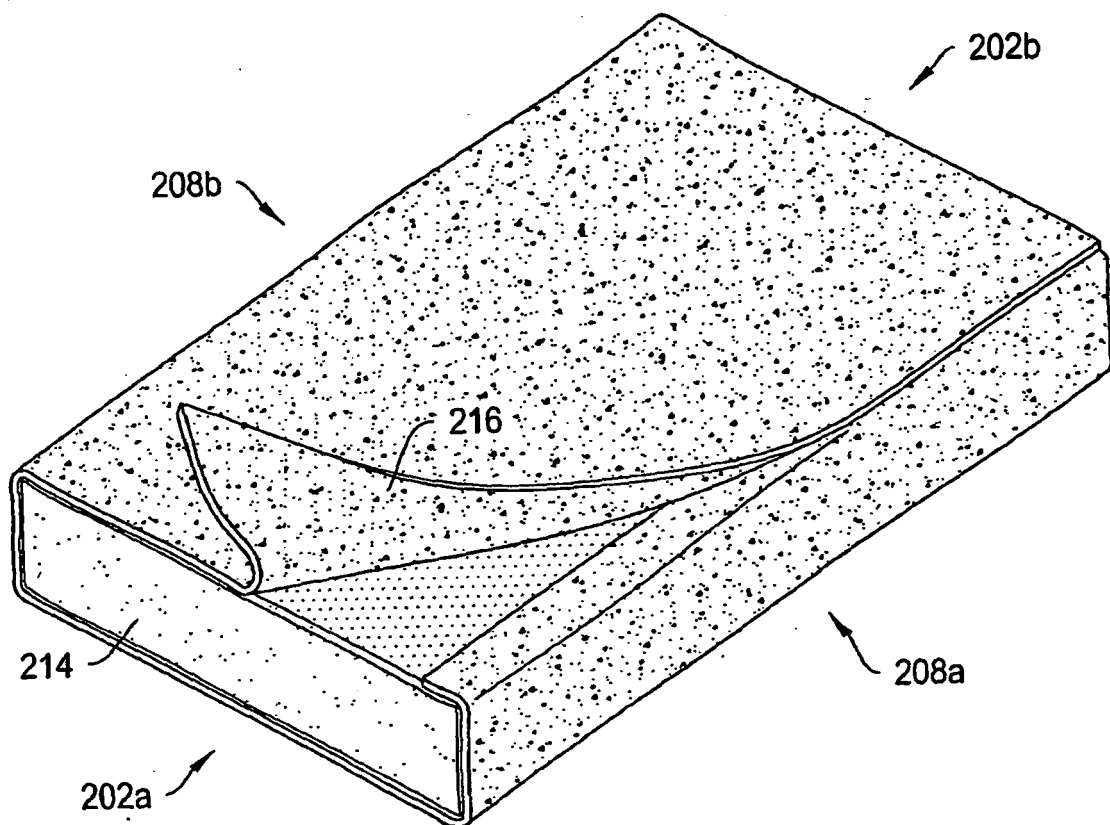


FIGURE 2F

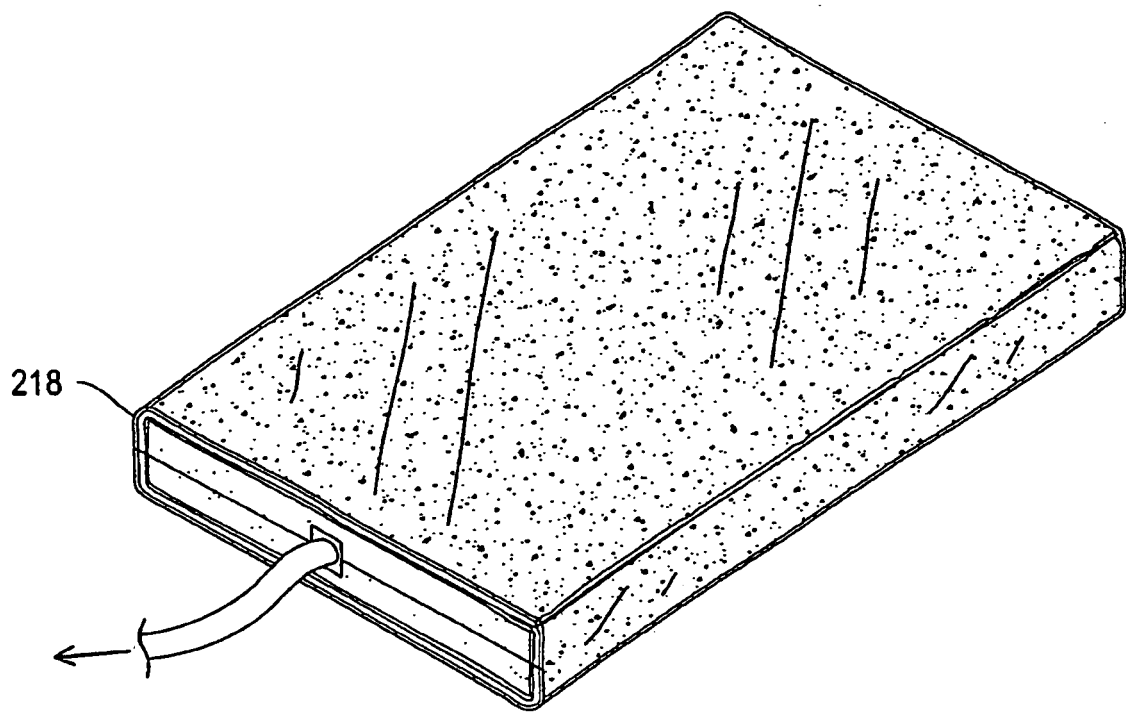


FIGURE 2G

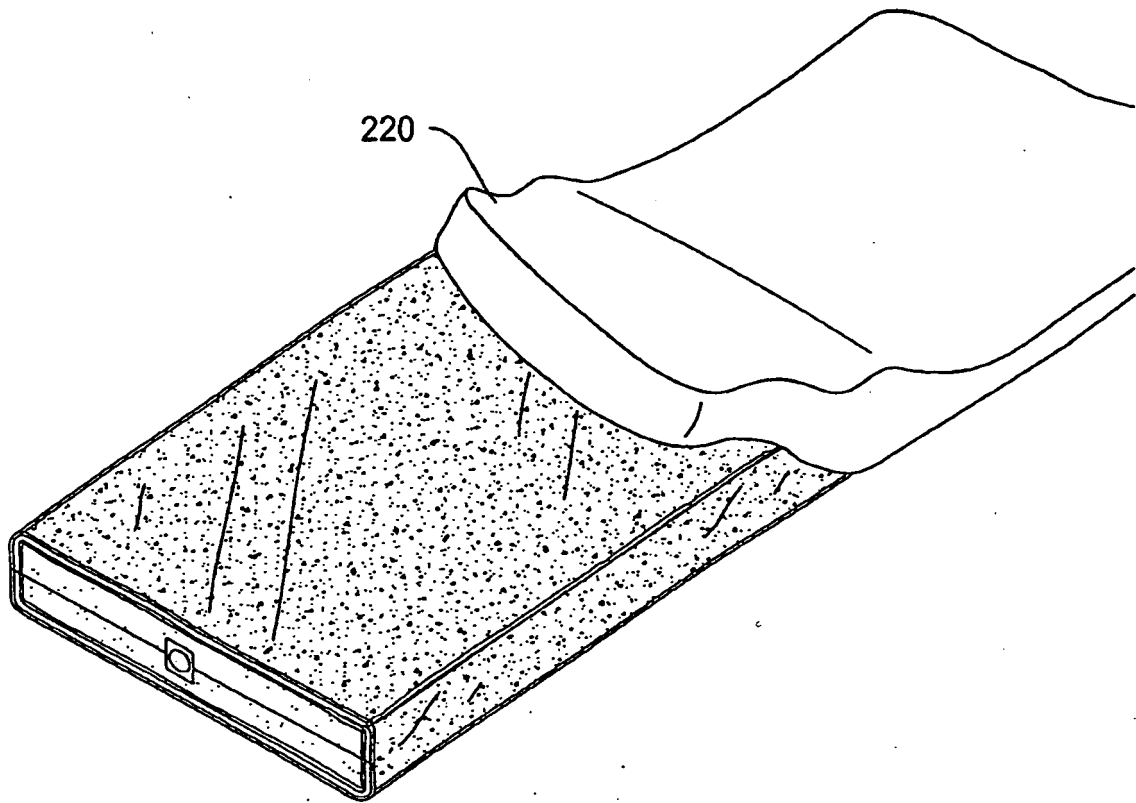


FIGURE 2H

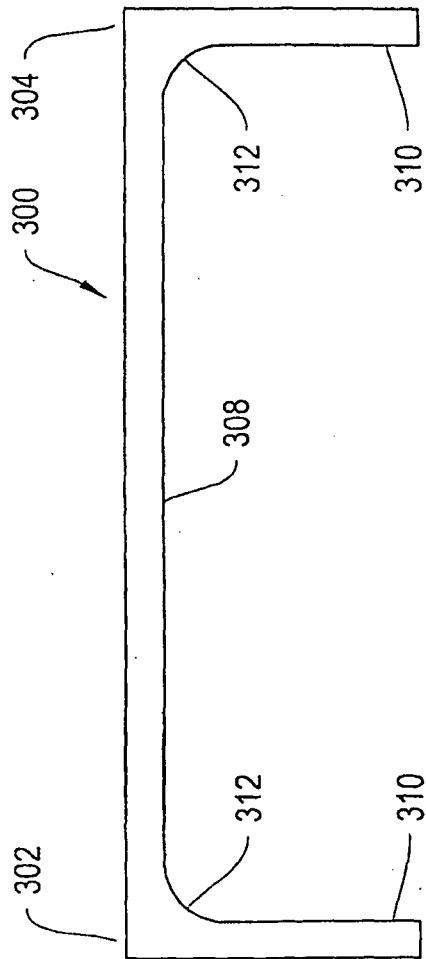


Fig. 3

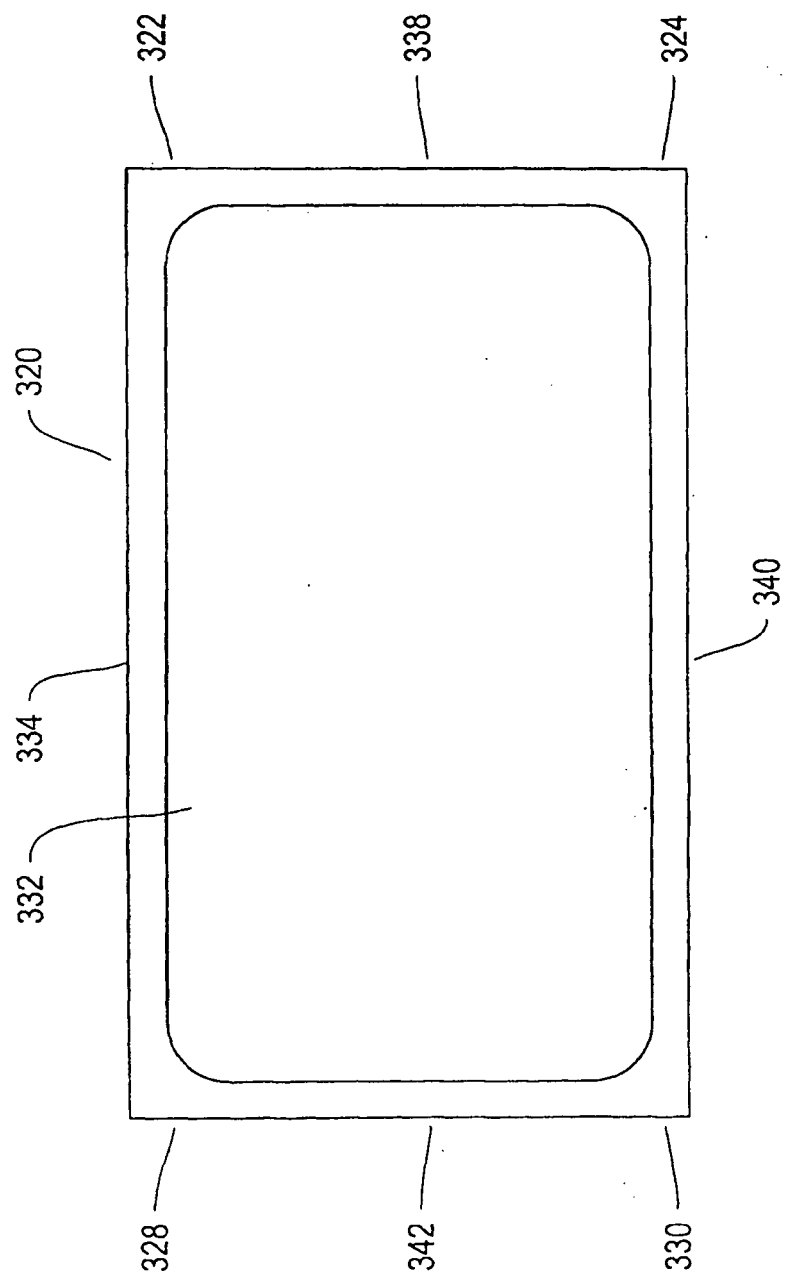


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 4539723 A [0003]