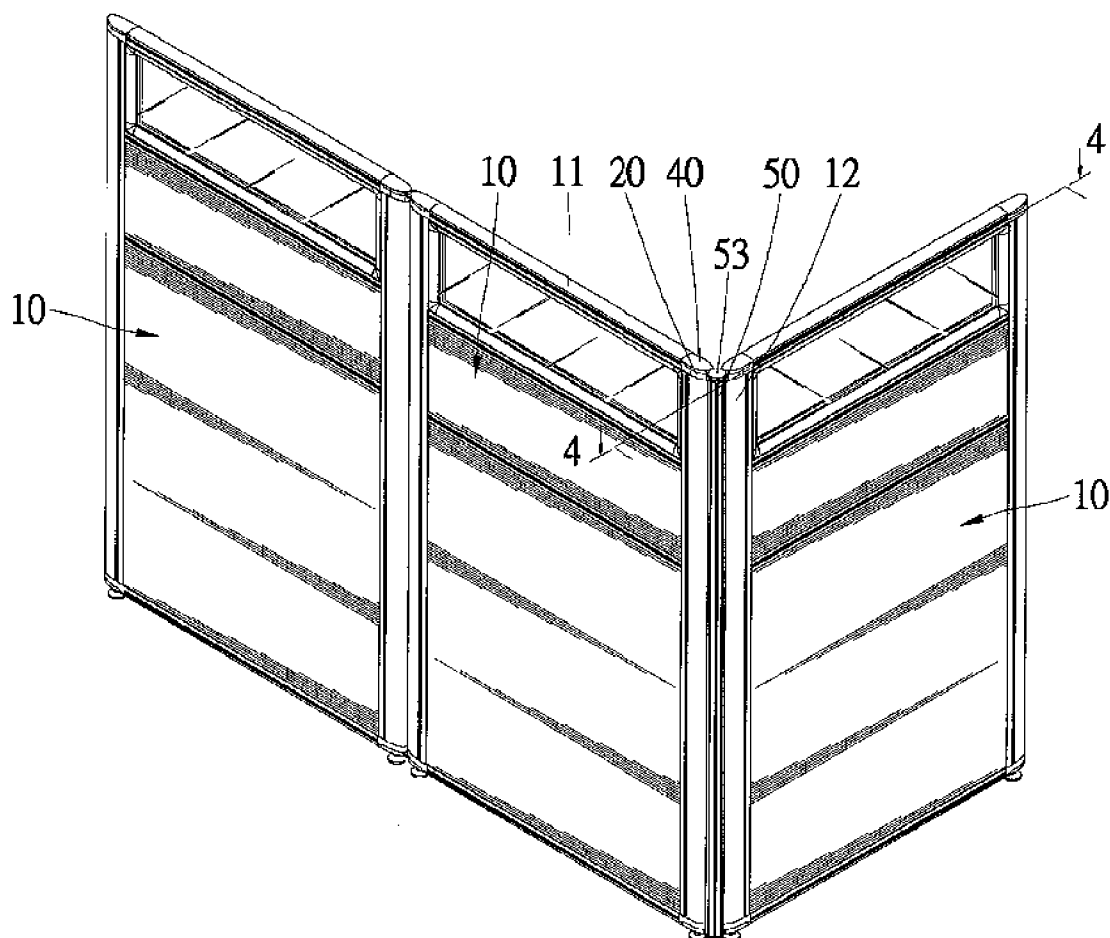




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**Tsai**(10) **Pub. No.: US 2006/0254176 A1**(43) **Pub. Date: Nov. 16, 2006**(54) **COMBINATIVE PARTITION****Publication Classification**(75) Inventor: **Charles Tsai**, Nantou (TW)(51) **Int. Cl.**  
**E04C 2/34** (2006.01)(52) **U.S. Cl.** ..... **52/481.2**Correspondence Address:  
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**MINNEAPOLIS, MN 55402 (US)**(57) **ABSTRACT**

A combinative partition includes at least two panels, a corner element, and a connector. Each panel includes a top cover installed thereon and a vertical edge element secured thereto. The corner element connects the top cover with the vertical edge element of each of the panels. The connector is connected with each of the corner elements in a non-pivotal manner so that the panels are kept at desired angles from one another.

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Nantou (TW)(21) Appl. No.: **10/907,723**(22) Filed: **Apr. 13, 2005**

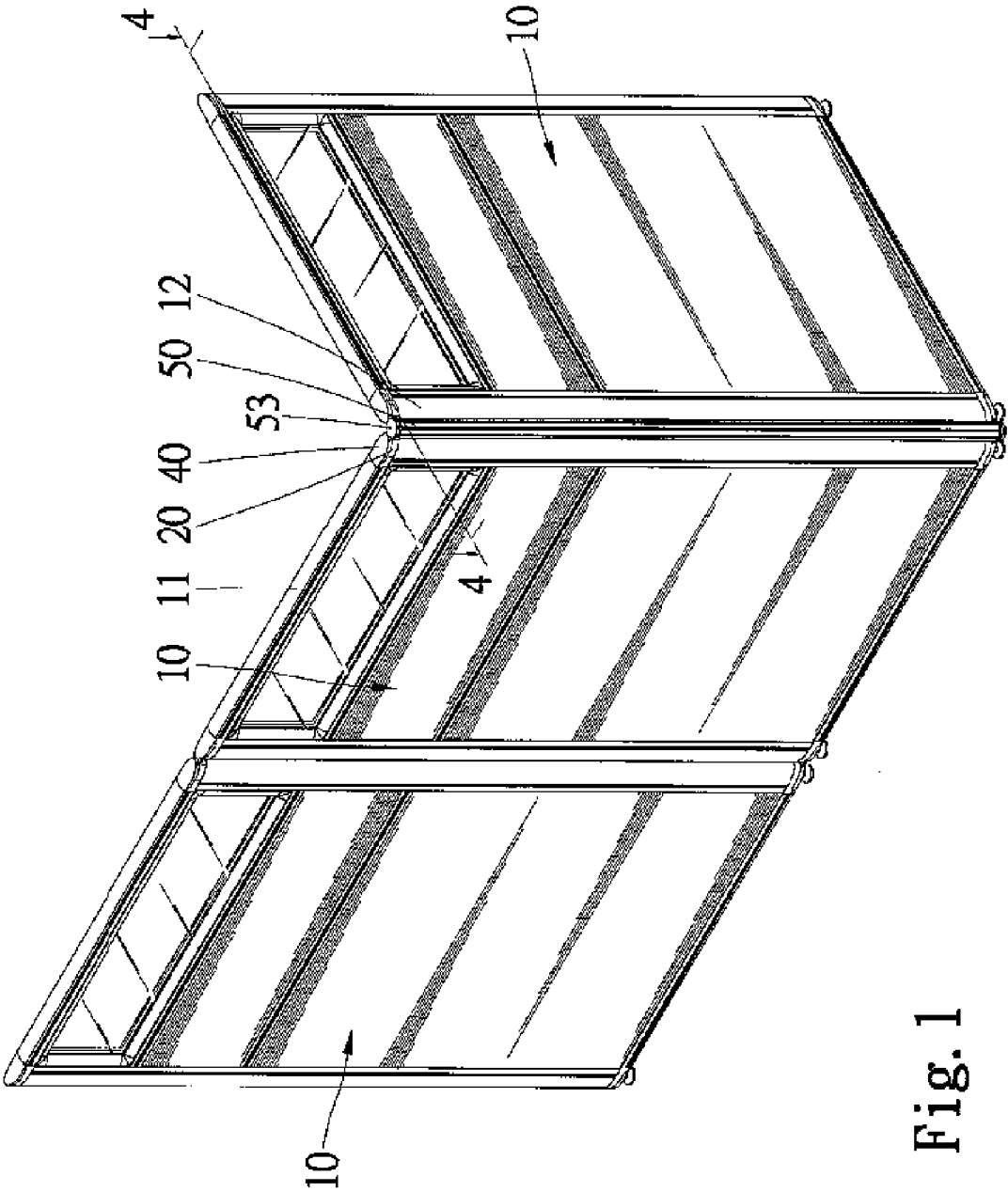


Fig. 1

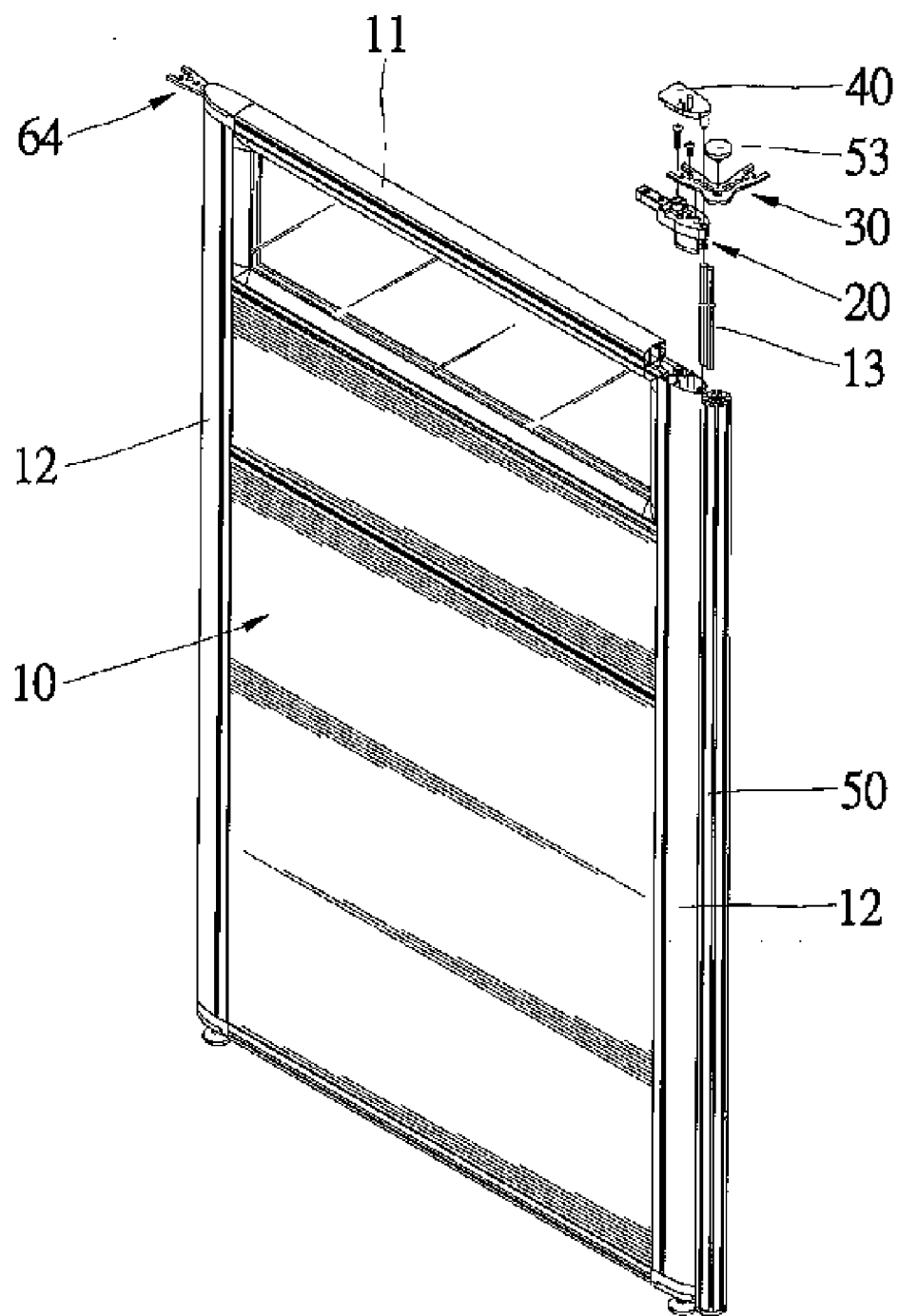


Fig. 2

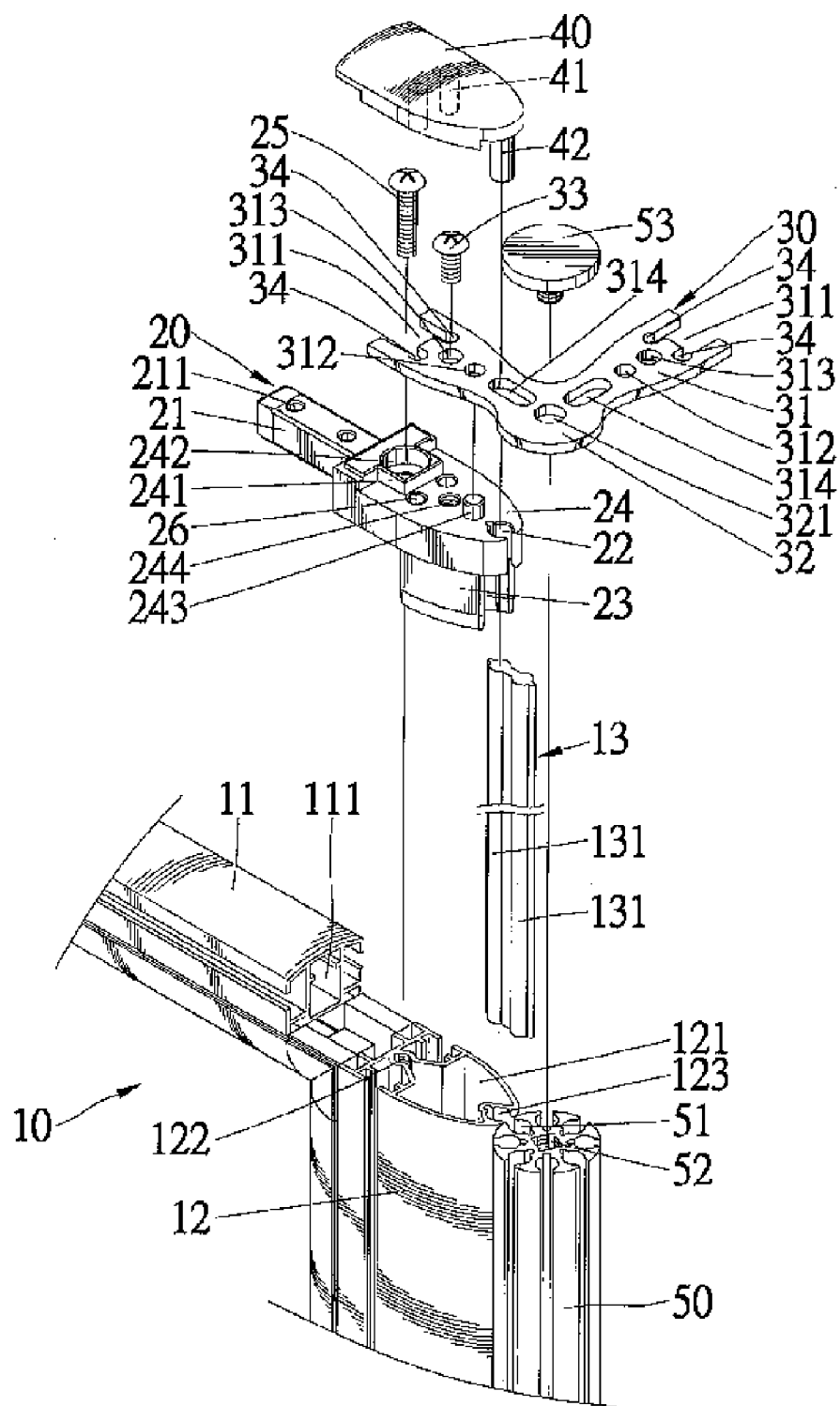
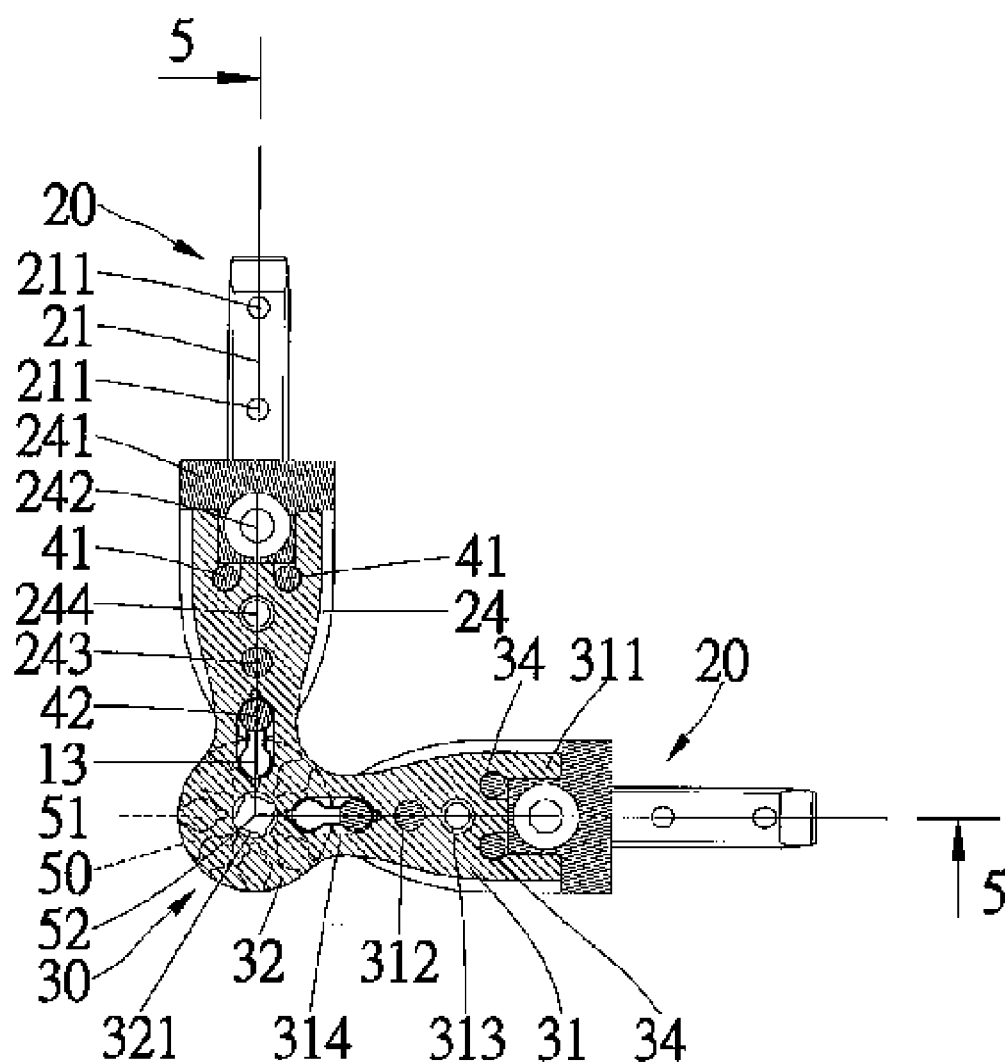
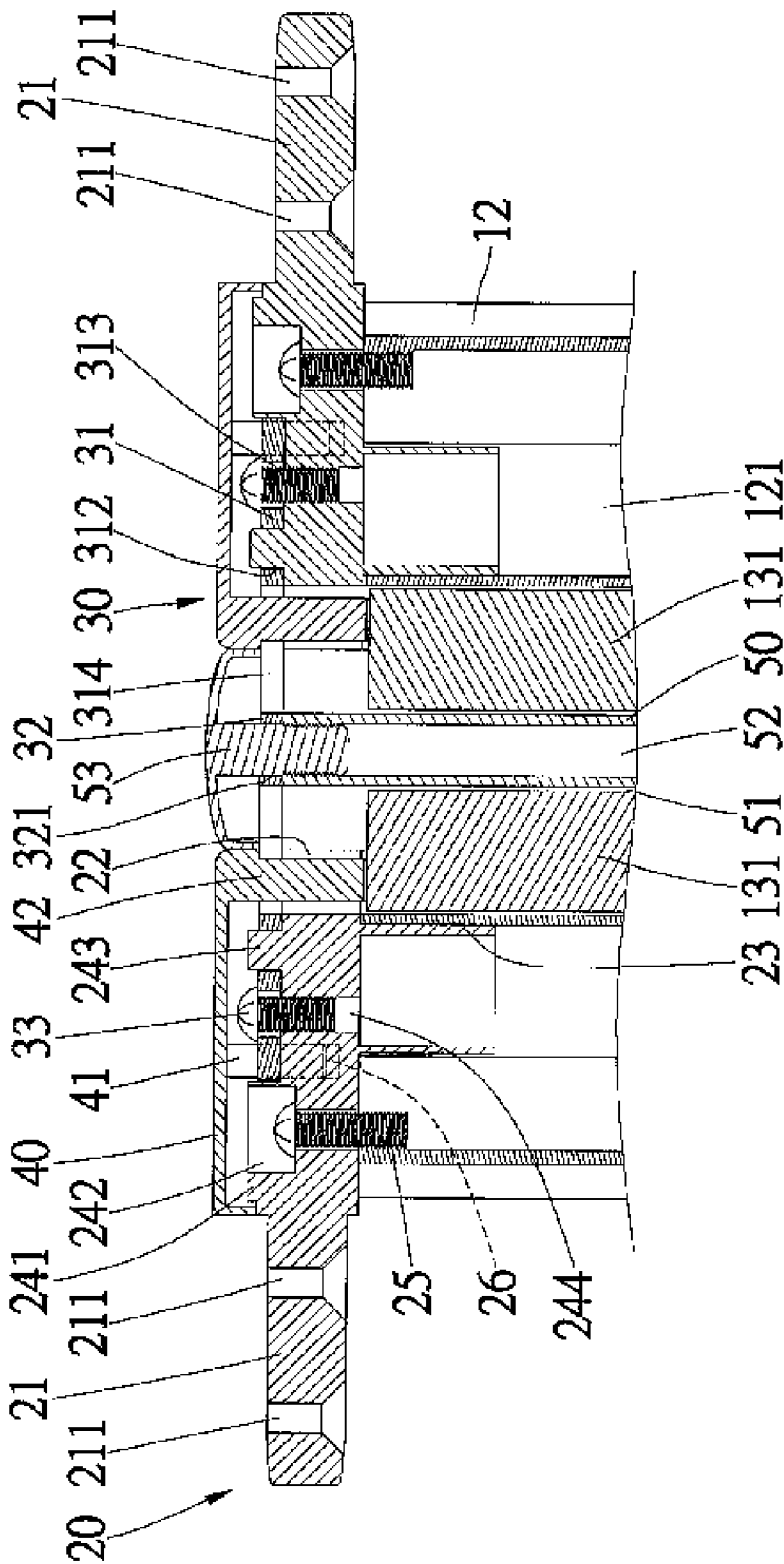


Fig. 3



4-4  
Fig. 4



5-5  
Fig. 5

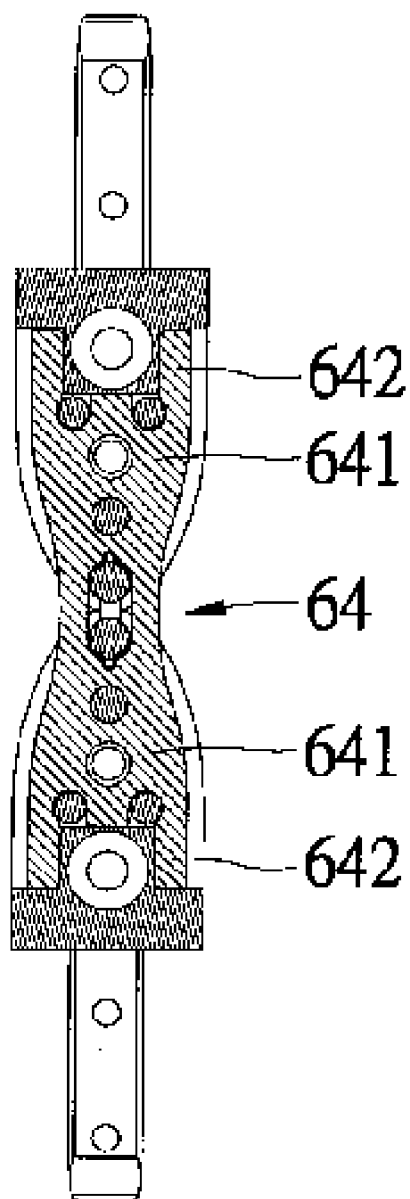


Fig. 6

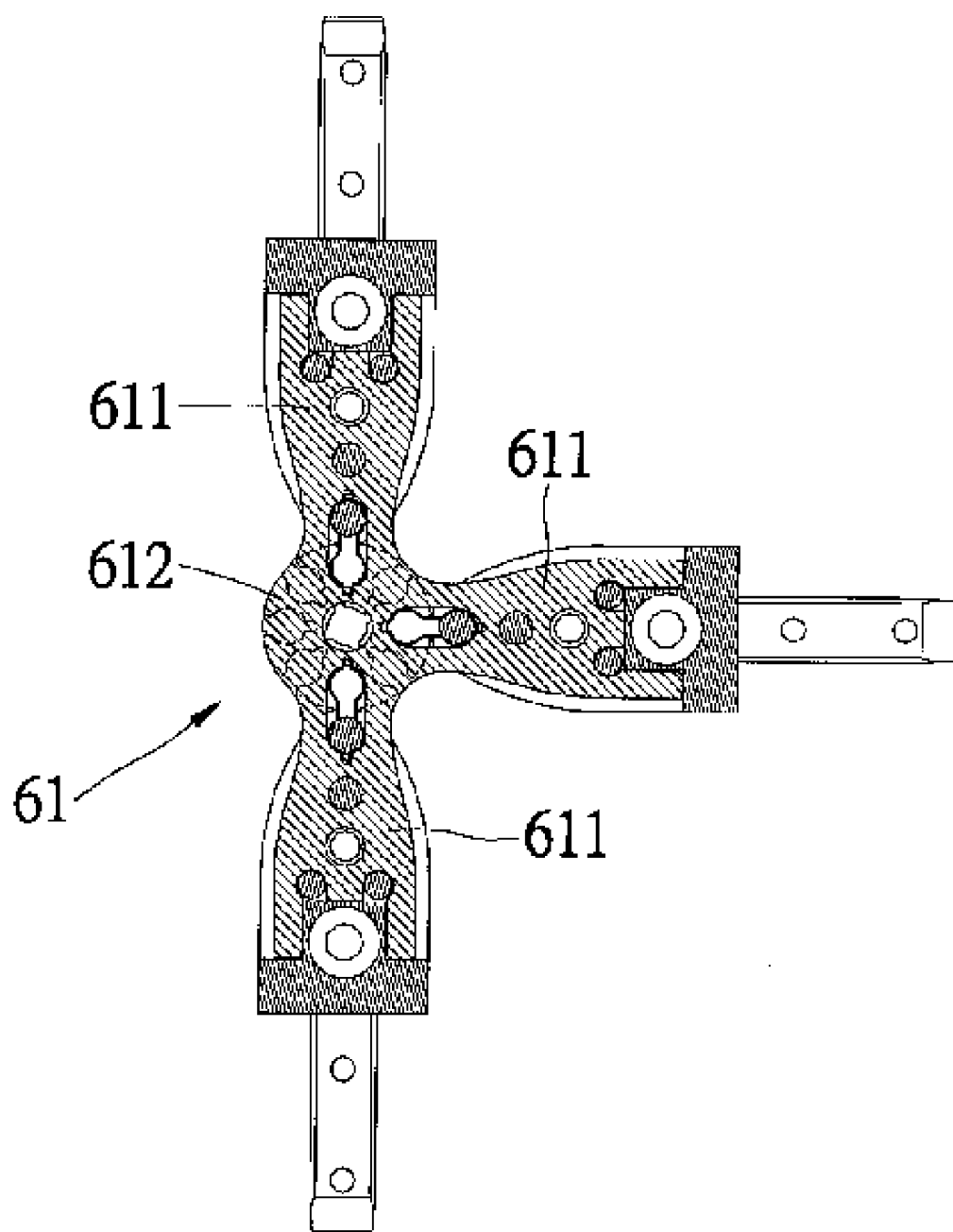


Fig. 7



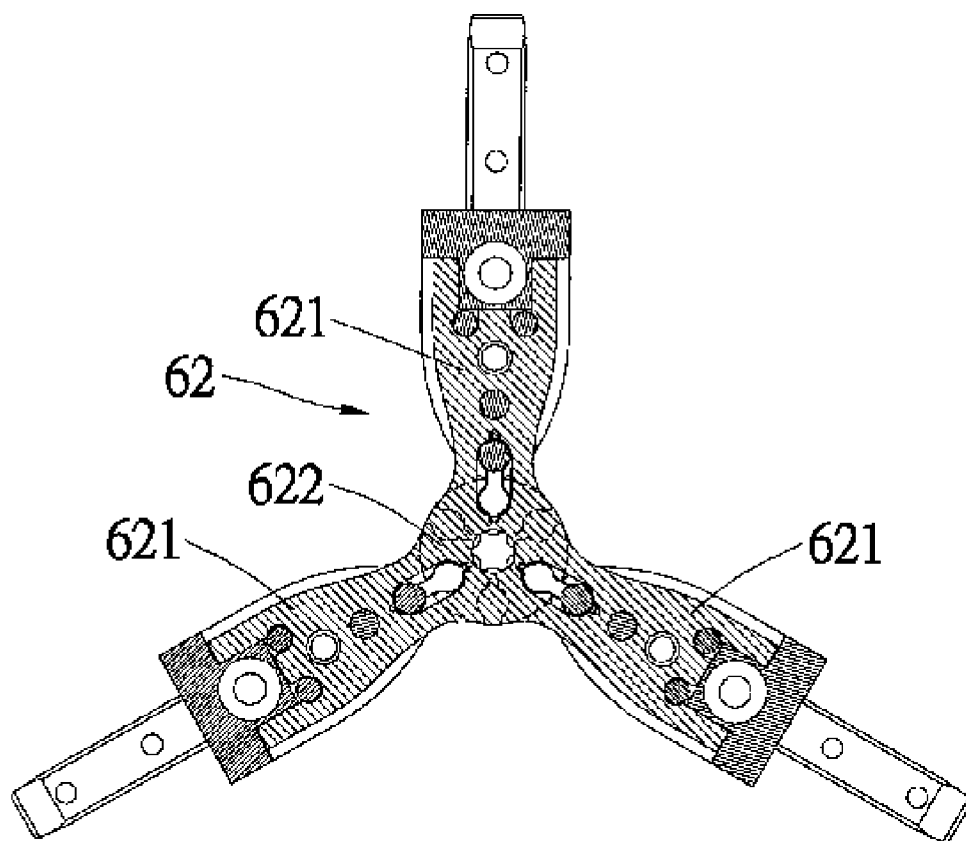


Fig. 8

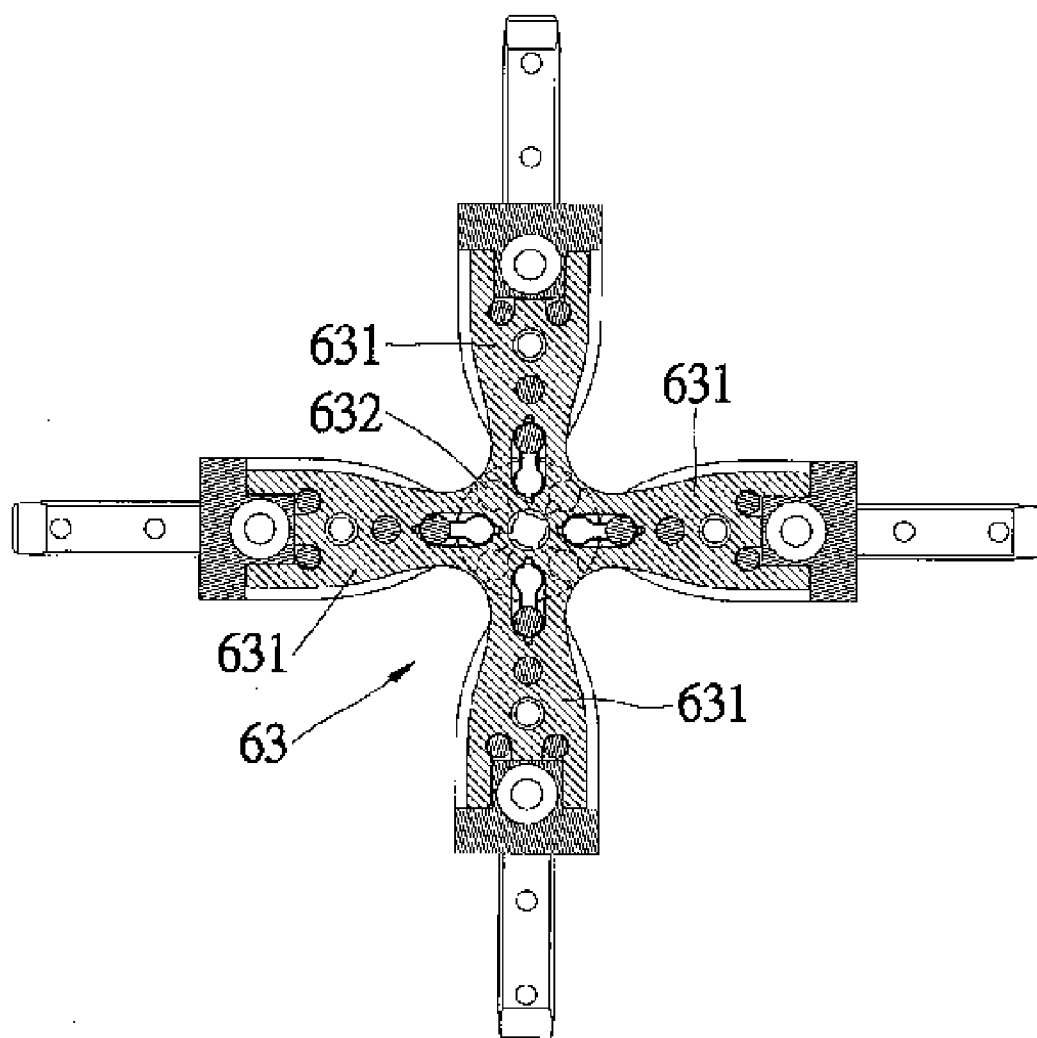


Fig. 9

## COMBINATIVE PARTITION

### BACKGROUND OF INVENTION

#### [0001] 1. Field of Invention

[0002] The present invention relates to a combinative partition.

#### [0003] 2. Related Prior Art

[0004] In Taiwanese Patent 1223022, **FIG. 1**, a combinative partition includes two panels **1**, two connectors **2**, and a seam element **3**. Each panel **1** includes a panel **11**, an edge element **12** secured to each vertical edge thereof, a screw hole **13** defined in each end of each edge element **12**, and a sheath **15** for covering each edge element **12**. Each connector **2** includes a flat member **21**, two screws **201** or **202**, and two screws **203**. Each flat member **21** defines two apertures **20** and two apertures **222** between the apertures **20**. The seam element **3** includes two screw holes **31** defined in each end thereof. In assembly, the seam element **3** is located between the panels **1** and, more particularly, between the sheaths **15**. Each flat member **21** is put against a related end of each edge element **12** and a related end of the seam element **3**. Each screw **201** or **202** is driven into a related screw hole **13** through a related aperture **20**. Each screw **203** is driven into a related screw hole **31** through a related aperture **212**.

[0005] Some problems have been encountered in the manufacturing and use of the conventional combinative partition. Firstly, the panels **1** tend to pivot relative to each other because each of them is connected with each flat element **21** by means of only one screw **201** or **202**. The flat elements **21** are useless in keeping the panels **1** in an angle although the flat elements **21** extend in an angle. Secondly, the screws **201**, **202** and **203** are exposed and are far from aesthetically pleasing. This unpleasing appearance might stop customers from buying the combinative partition. Thirdly, a cruciform combinative partition requires four seam elements **3**, and this results in a high cost in the manufacturing thereof and causes troubles in the assembling thereof.

[0006] The present invention is intended to obviate or at least alleviate the problems encountered in prior art.

### SUMMARY OF INVENTION

[0007] According to the present invention, a combinative partition includes at least two panels, a corner element, and a connector. Each panel includes a top cover installed thereon and a vertical edge element secured thereto. The corner element connects the top cover with the vertical edge element of each of the panels. The connector is connected with each of the corner elements in a non-pivotal manner so that the panels are kept at desired angles from one another.

[0008] The primary advantage of the combinative partition of the present invention is that the panels are kept at desired angles from one another.

[0009] Other advantages and novel features of the invention will become more apparent from the following detailed description in conjunction with the attached drawings.

### BRIEF DESCRIPTION OF DRAWINGS

[0010] The present invention will be described through detailed description of embodiments referring to the drawings.

[0011] **FIG. 1** is a perspective view of a combinative partition according to a first embodiment of the present invention.

[0012] **FIG. 2** is an exploded view of a panel and related elements used in the combinative partition shown in **FIG. 1**.

[0013] **FIG. 3** is an enlarged partial view of the panel and related elements shown in **FIG. 2**.

[0014] **FIG. 4** is a cross-sectional view of the elements shown in **FIG. 3**.

[0015] **FIG. 5** is a cross-sectional view taken along a line 5-5 in **FIG. 4**.

[0016] **FIG. 6** is a cross-sectional view of elements for a combinative partition according to a second embodiment of the present invention.

[0017] **FIG. 7** is a cross-sectional view of elements for a combinative partition according to a third embodiment of the present invention.

[0018] **FIG. 8** is a cross-sectional view of elements for a combinative partition according to a fourth embodiment of the present invention.

[0019] **FIG. 9** is a cross-sectional view of elements for a combinative partition according to a fifth embodiment of the present invention.

### DETAILED DESCRIPTION OF EMBODIMENTS

[0020] Referring to **FIG. 1**, according to the present invention, a combinative partition includes three panels **10**. The first panel **10** extends in perpendicular to the second panel **10**. The first panel **10** is connected with the second panel **10** by means of elements according to a first embodiment of the present invention referring to **FIGS. 2 through 5**. The second and third panels **10** extend in a same plane. The second panel **10** is connected with the third panel **10** by means of elements according to a second embodiment referring to **FIG. 6**.

[0021] Referring to **FIGS. 2 through 5**, a top cover **11** is installed on the upper horizontal edge of each panel **10**. Each top cover **11** includes a hole **111** defined in each end thereof. A vertical edge element **12** is secured to each vertical edge of each panel **10**. Each vertical edge element **12** includes a hole **121** defined in each end thereof, a screw hole **122** defined in each end thereof, and a groove **123** defined in an edge thereof.

[0022] A seam element **50** is provided between at least two panels **10**. The seam element **50** includes a screw hole **51** defined in each end thereof and a plurality of grooves **52** defined in and along the periphery thereof.

[0023] A ligament **13** includes two enlarged portions **131** extending in parallel to each other. One of the enlarged portions **131** is inserted into the groove **123** of each vertical edge element **12** while the remaining enlarged portion **131** is inserted into one of the grooves **51** of the seam element **50**. Thus, the vertical edge element **12** is connected with the seam element **50**. Although only one ligament **13** is shown, two ligaments **13** are used to connect a vertical edge element **12** with a seam element **50**. One of the ligaments **13** is inserted into the grooves **123** and **51** from the top while the remaining ligament **13** is inserted into the grooves **123** and **51** from the bottom.

[0024] A corner element 20 is used to connect a top cover 11 with a vertical edge element 12. The corner element 20 includes a block 24, a horizontal insert 21 formed on the block 24 and a vertical insert 23 formed on the block 24. A screw hole 211 is defined in the horizontal insert 21. A groove 22 is defined in the block 24 opposite to the horizontal insert 21. The block 24 includes a boss 243 formed thereon, a screw hole 244 defined therein, two holes 26 defined therein, a plateau 241 formed thereon, and an aperture 242 defined in the plateau 241.

[0025] The horizontal insert 21 is inserted in one of the hole 111 of a top cover 11. Although not shown, a screw may be driven into the screw hole 211 through the top cover 11. The vertical insert 23 is inserted in one of the holes 121 of a vertical edge element 12. The groove 22 receives one of the enlarged portions 131.

[0026] A screw 25 is driven into the screw hole 122 through the aperture 242 in order to keep the corner element 20 in position.

[0027] A connector 30 is used to connect at least two panels 10. In the first embodiment, the connector 30 includes a central portion 32 and two terminal portions 31 extending from the central portion 32 at the right angle from each other. The central portion defines an aperture 321. Each terminal portion 31 defines a slot 314, an aperture 312, an aperture 313, two apertures 34, and a cutout 311.

[0028] The central portion 32 is installed on the seam element 50. Each terminal portion 31 is installed on the block 24. The slot 314 is aligned with the groove 22. The aperture 312 receives the boss 243. The aperture 313 is aligned with the screw hole 244. The apertures 34 are aligned with the holes 26. The cutout 311 receives the plateau 241.

[0029] A screw 53 is driven into the screw hole 52 through the aperture 321, and a screw 33 is driven into the screw hole 244 through the aperture 312 in order to keep these elements connected with one another.

[0030] A corner cover 40 is used to cover a corner element 20. The corner cover 40 includes a plug 42 extending from a lower side thereof and two plugs 41 extending from the lower side. The plug 42 is fit into the groove 22 through a slot 314. The plugs 41 are fit into the apertures 26 through the apertures 34.

[0031] Referring to FIG. 6, a straight connector 64 is used for a combinative partition according to the second embodiment of the present invention. The straight connector 64 includes a central portion 642 and two terminal portions 641 extending from the central portion 642 opposite to each other. This straight connector 64 is used to connect two panels 10 with each other. The second embodiment is otherwise identical to the first embodiment.

[0032] Referring to FIG. 7, a T-shaped connector 61 is provided for a combinative partition according to a third embodiment of the present invention. The T-shaped connector 61 includes a central portion 612 and three terminal portions 611 extending from the central portion 612. The T-shaped connector 61 is used to connect three panels 10 with one another. The third embodiment is otherwise identical to the first embodiment.

[0033] Referring to FIG. 8, a radial connector 62 is provided for a combinative partition according to a fourth embodiment of the present invention. The radial connector 62 includes a central portion 622 and three terminal portions 621 extending from the central portion 622 at an angle of 120 degrees from one another. The T-shaped connector 62 is used to connect three panels 10 with one another. The fourth embodiment is otherwise identical to the first embodiment.

[0034] Referring to FIG. 9, a cruciform connector 63 is provided for a combinative partition according to a fifth embodiment of the present invention. The cruciform connector 63 includes a central portion 632 and four terminal portions 631 extending from the central portion 632 at the right angle from one another. This cruciform connector 63 is used to connect four panels 10 with one another. The fifth embodiment is otherwise identical to the first embodiment.

[0035] The primary advantage of the combinative partition of the present invention includes several advantageous features. Firstly, the panels 10 are kept at desired angles from one another. Secondly, the corner elements 20 are covered by means of the cover 40 that are aesthetically pleasing. Thirdly, only one seam element 50 is used for connection of several panels 10.

[0036] The present invention has been described through the detailed description of the embodiments. Those skilled in the art can derive variations from the embodiments without departing from the scope of the present invention. Therefore, the embodiments shall not limit the scope of the present invention defined in the claims.

What is claimed is:

1. A combinative partition comprising:

at least two panels comprising a top cover installed thereon and a vertical edge element secured thereto;

a corner element for connecting the top cover with the vertical edge element of each of the panels; and

a connector connected with each of the corner elements in a non-pivotal manner so that the panels are kept at desired angles from one another.

2. The combinative partition according to claim 1 wherein each of the corner elements comprises a block, wherein the connector comprises a central portion and at least two terminal portions extending from the central portion, wherein each of the terminal portions of the connector is installed on the block of the corner element.

3. The combinative partition according to claim 2 wherein the block of each of the corner elements comprises a plateau formed thereon, wherein each of the terminal portions of the connector defines a cutout for receiving the plateau.

4. The combinative partition according to claim 3 wherein the plateau defines an aperture, wherein the vertical edge element defines a screw hole therein for receiving a screw through the aperture.

5. The combinative partition according to claim 2 wherein the block of each of the corner elements comprises a boss formed thereon, wherein each of the terminal portions of the connector defines an aperture for receiving the boss so that the block of each of the corner elements is precisely positioned on each of the terminal portions of the connector.

6. The combinative partition according to claim 2 wherein each of the terminal portions of the connector defines an aperture, wherein the block of each of the corner elements

defines a screw hole for receiving a screw through the aperture of each of the terminal portions of the connector.

7. The combinative partition according to claim 2 comprising a corner cover for covering each of the terminal portions of the connector.

8. The combinative partition according to claim 7 wherein the corner cover comprises at least one plug projecting from a lower side thereof, wherein the connector defines at least one aperture for receiving the plug.

9. The combinative partition according to claim 8 wherein the block of each of the corner element defines at least one hole for receiving the plug.

10. The combinative partition according to claim 2 comprising a seam element connected with the vertical edge elements.

11. The combinative partition according to claim 10 comprising a ligament for connecting each of the vertical edge elements with the seam element.

12. The combinative partition according to claim 11 wherein each of the vertical edge elements defines a groove, wherein the seam element defines at least two grooves, wherein the ligament comprises a first enlarged portion fit in the groove of each of the vertical edge elements and a second enlarged portion fit in one of the grooves of the seam element.

13. The combinative partition according to claim 12 wherein each of the corner elements defines a groove for receiving the first enlarged portion of the ligament.

14. The combinative partition according to claim 13 comprising a corner cover for covering each of the terminal portions of the connector.

15. The combinative partition according to claim 14 wherein each of the terminal portions of the connector defines a slot, wherein the corner cover comprises at least one plug fit into the groove of each of the corner elements through the slot of each of the terminal portions of the connector.

16. The combinative partition according to claim 8 wherein the block of each of the corner element defines at least one hole for receiving the plug.

17. The combinative partition according to claim 2 wherein the corner element comprises a horizontal insert inserted into the top cover from the block.

18. The combinative partition according to claim 17 wherein the horizontal insert defines at least one screw hole for receiving a screw driven through the top cover.

19. The combinative partition according to claim 2 wherein the corner element comprises a vertical insert inserted into the vertical edge element from the block.

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