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(54) MODULAR FURNITURE ASSEMBLY CORNER SEATING SYSTEM

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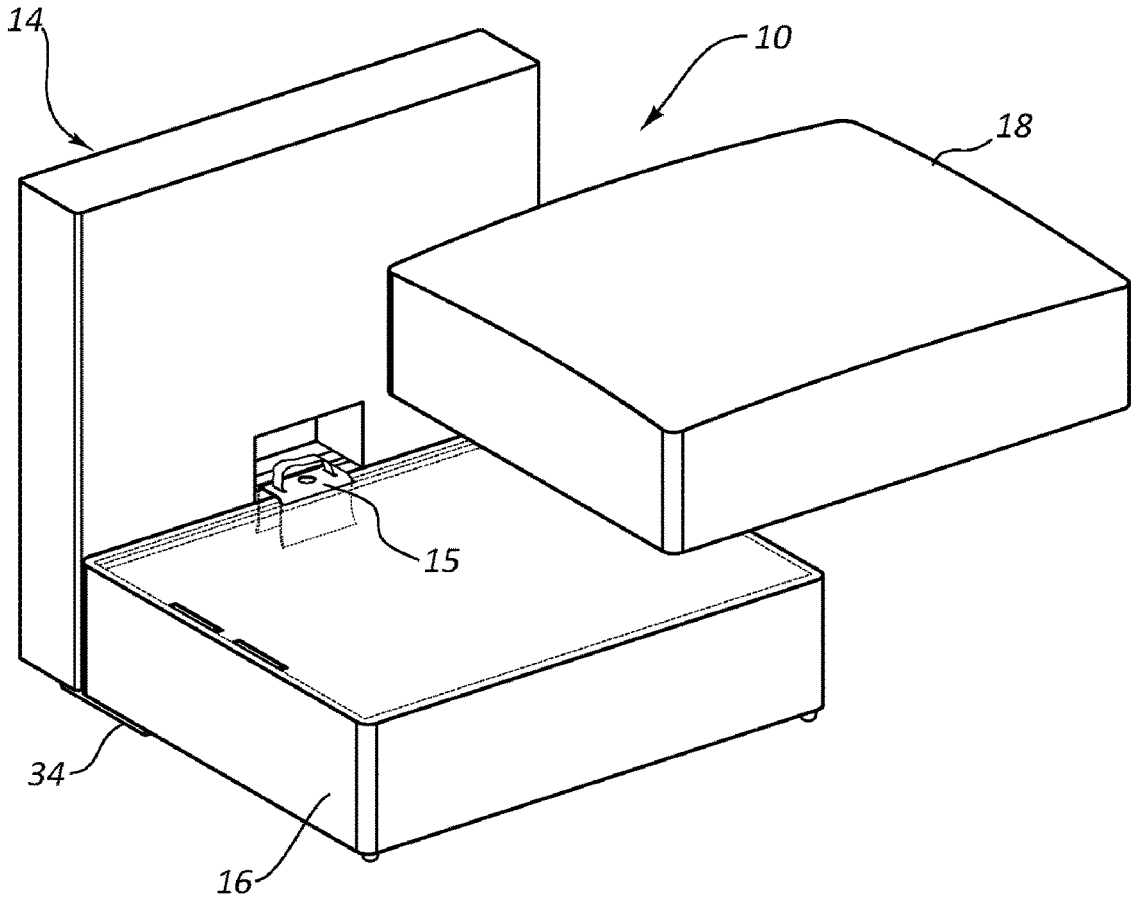
A47C 15/00	(2006.01)

(52) **U.S. Cl.**

CPC ***A47C 4/028*** (2013.01); ***A47C 15/002*** (2013.01); ***F16B 12/10*** (2013.01)

(57) **ABSTRACT**

A modular furniture assembly including a wedge shaped base for use with other modular furniture system rectangular bases and transverse members, all of which components adhere to an (x)=(y)+(z) relationship, wherein (x) is the length of the back of the wedge shaped base, the length of the transverse member, and the length of the rectangular base. (y) is both the length of the angled side(s) of the wedge shaped base, and the width of the rectangular base. (z) is the width (i.e., thickness) of the transverse member. The angled sides of the wedge shaped base can be at or about 45° relative to one another. The rectangular bases and wedge shaped bases are of the same height, and all can be coupled together in a wide variety of modular furniture configurations.



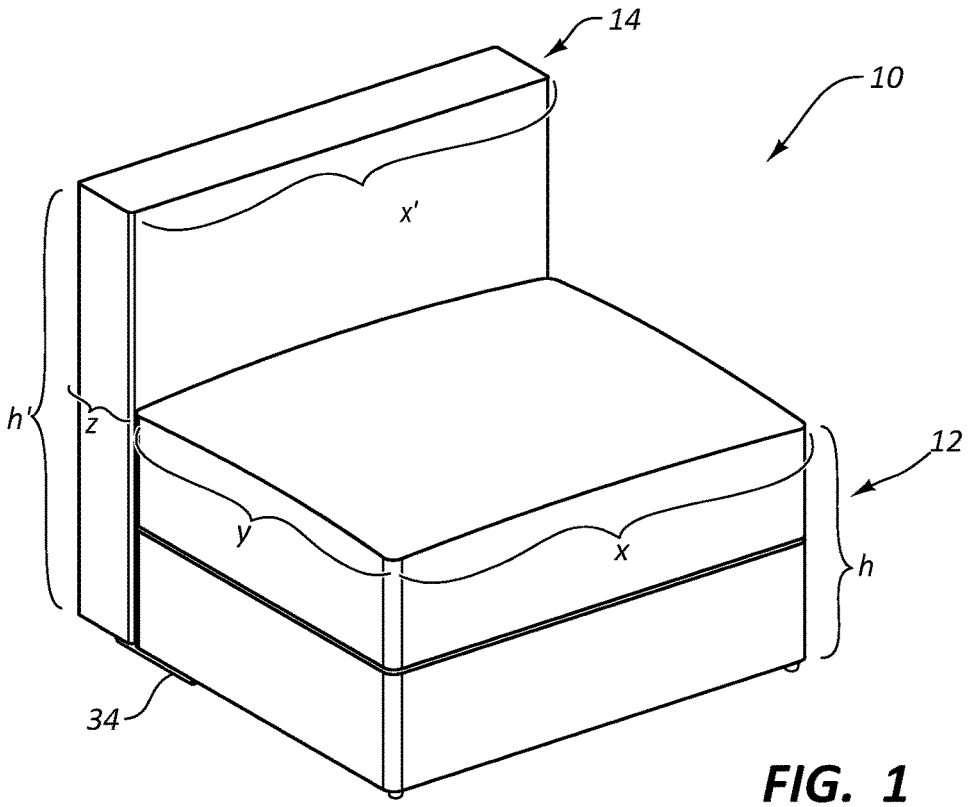


FIG. 1

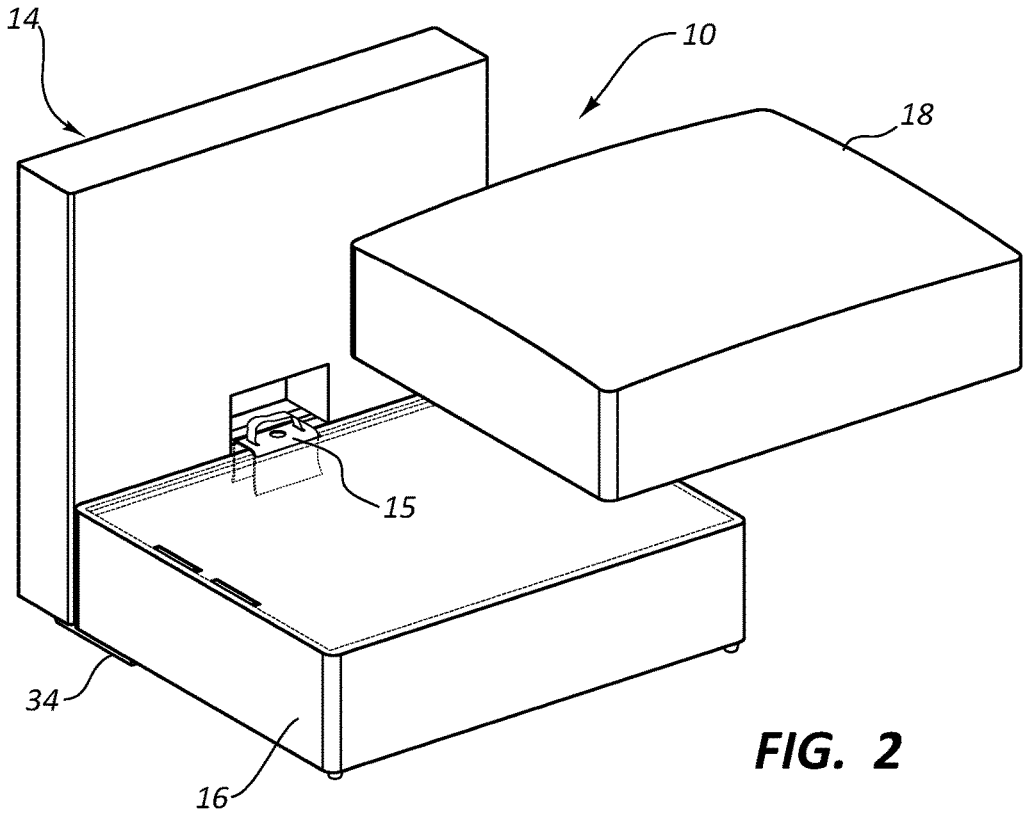


FIG. 2

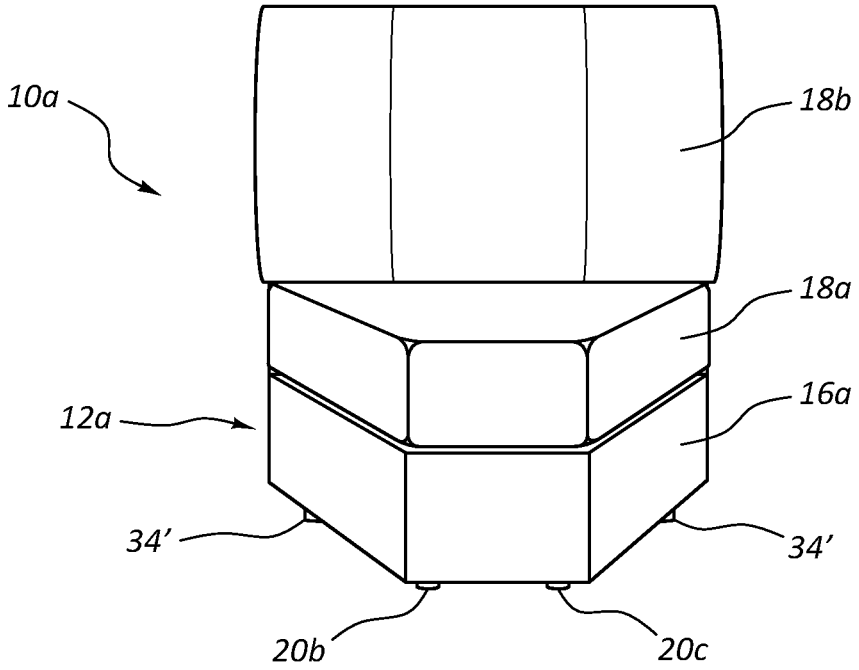

10a
18b
18a
16a
12a
34'
34'
20b
20c

FIG. 3

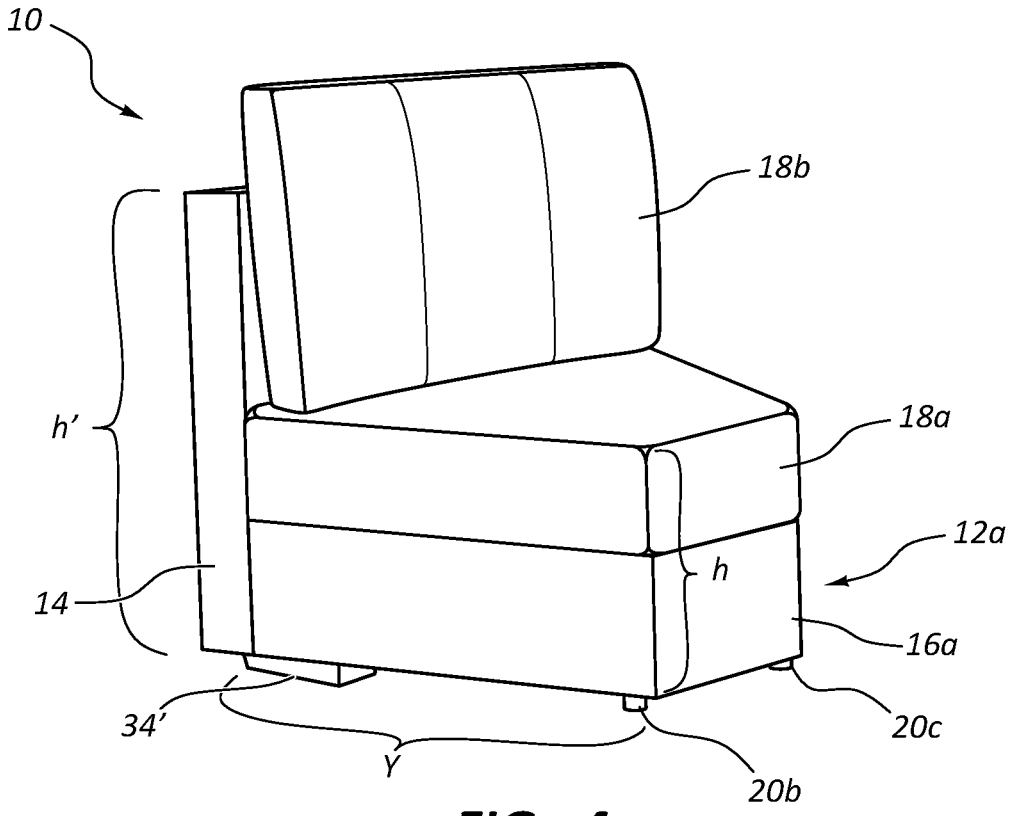

10
18b
h'
18a
12a
h
14
16a
34'
Y
20c
20b

FIG. 4

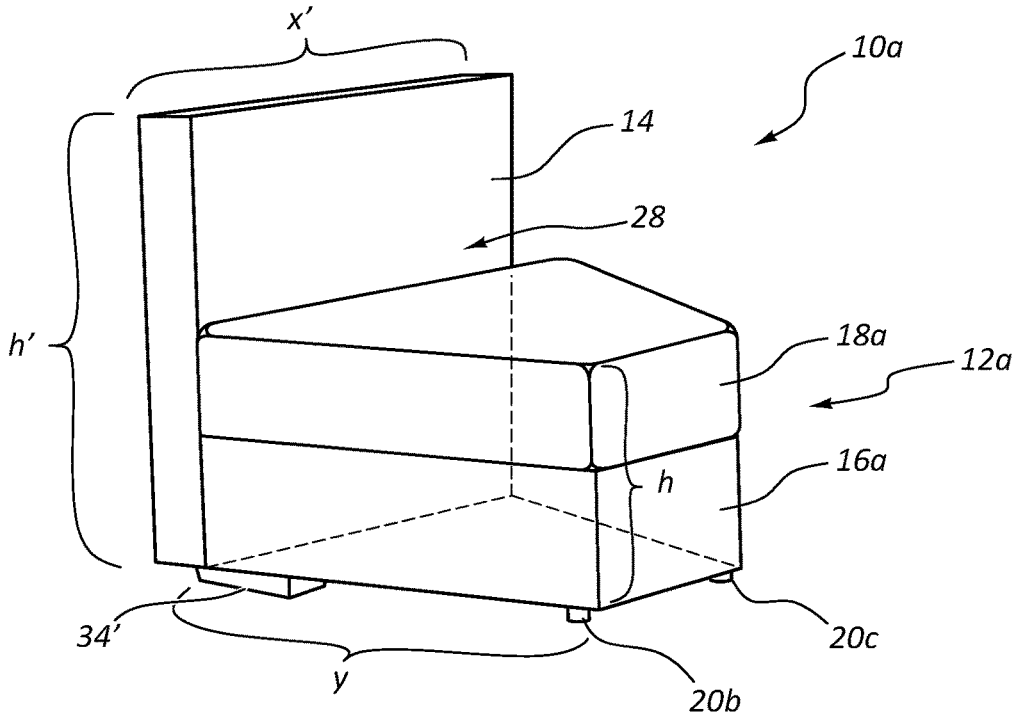


FIG. 5

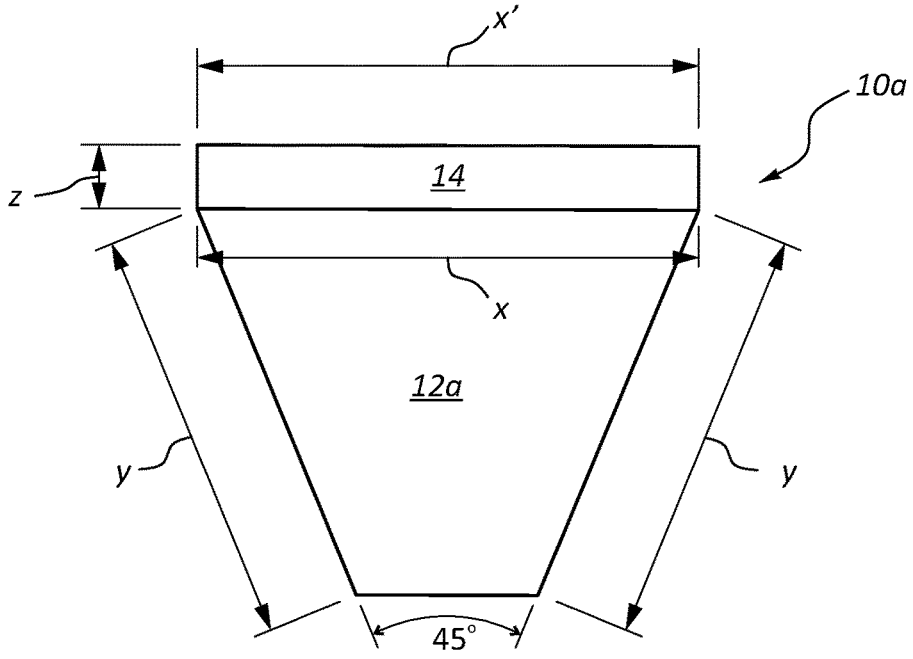


FIG. 6

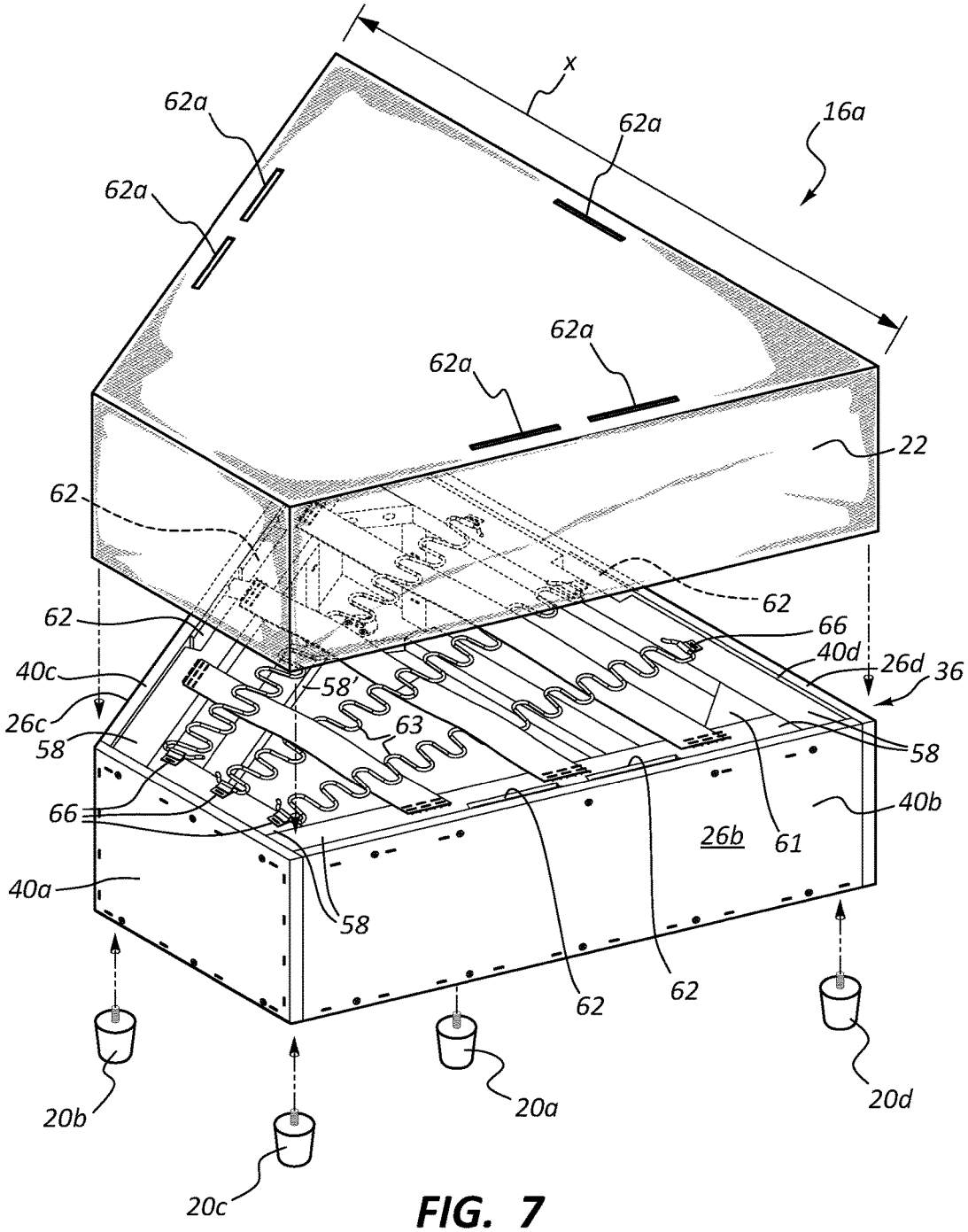

x
62a
62a
62a
62a
62a
16a
22
62
62
62
62
66
40d
26d
36
40c
58'
26c
58
63
58
66
40b
26b
61
40a
58
62
62
62
20b
20a
20d
20c

FIG. 7

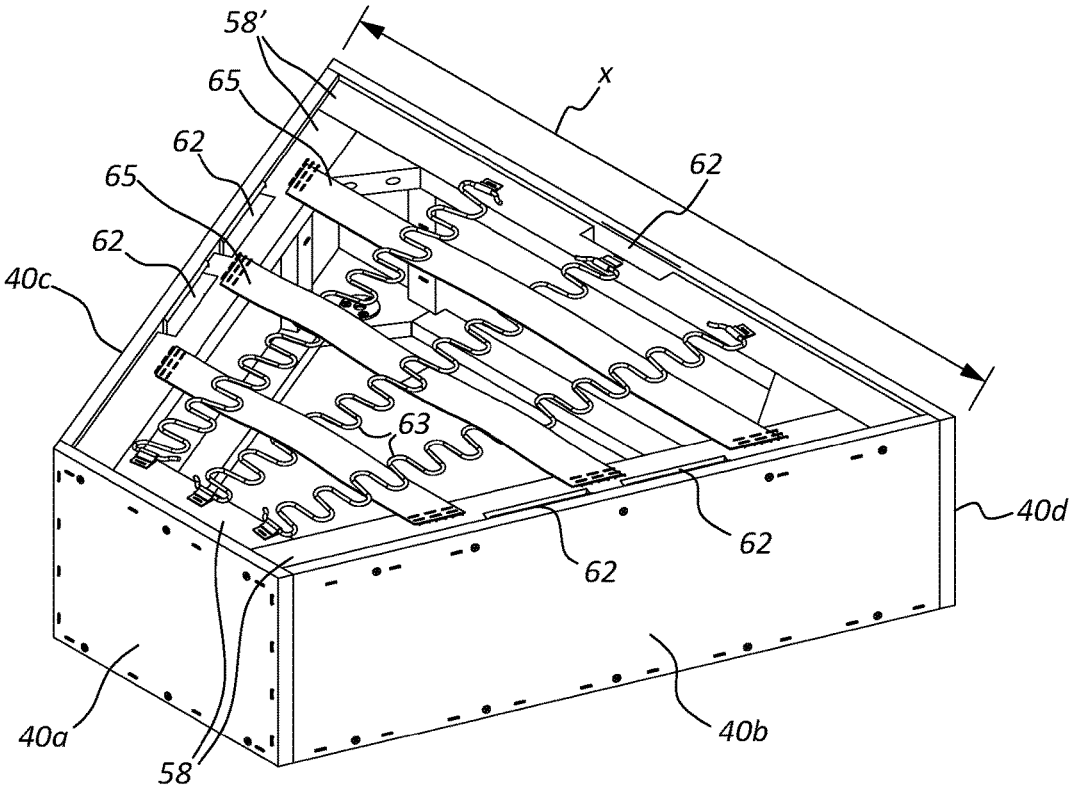

58'
65
62
65
62
40c
63
62
62
62
40d
40a
58
40b
x

FIG. 8

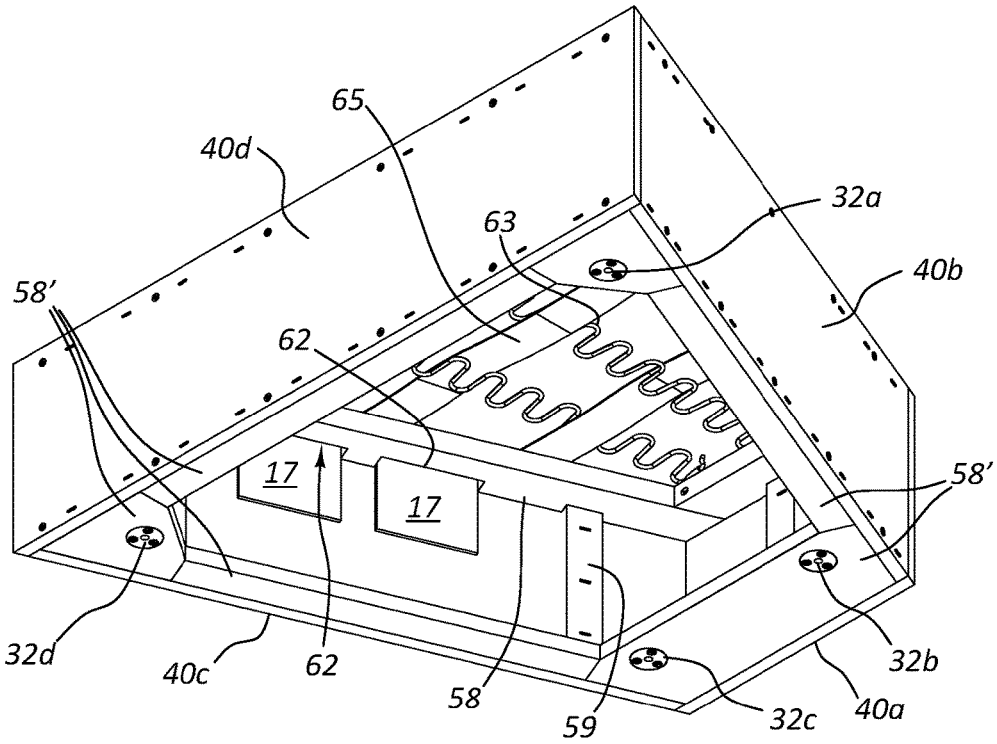

65
40d
63
32a
40b
58'
62
17
17
58'
32d
40c
62
58
59
32c
32b
40a

FIG. 9

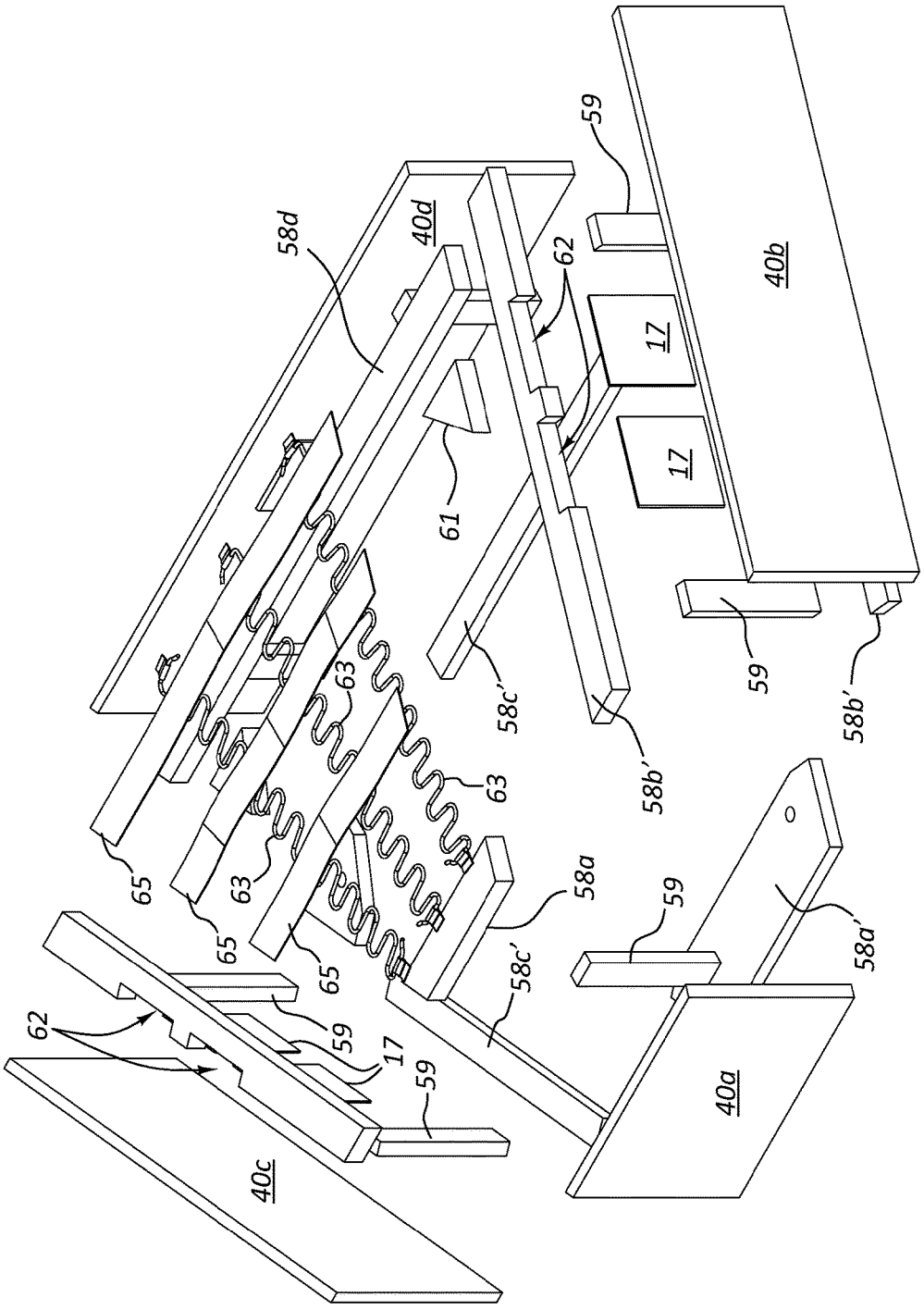

58d
40d
62
59
40b
17
17
61
63
63
63
58c'
58b'
59
59
58b'
65
65
65
58a
58c'
59
58a'
62
59
17
59
40c
40a

FIG. 10

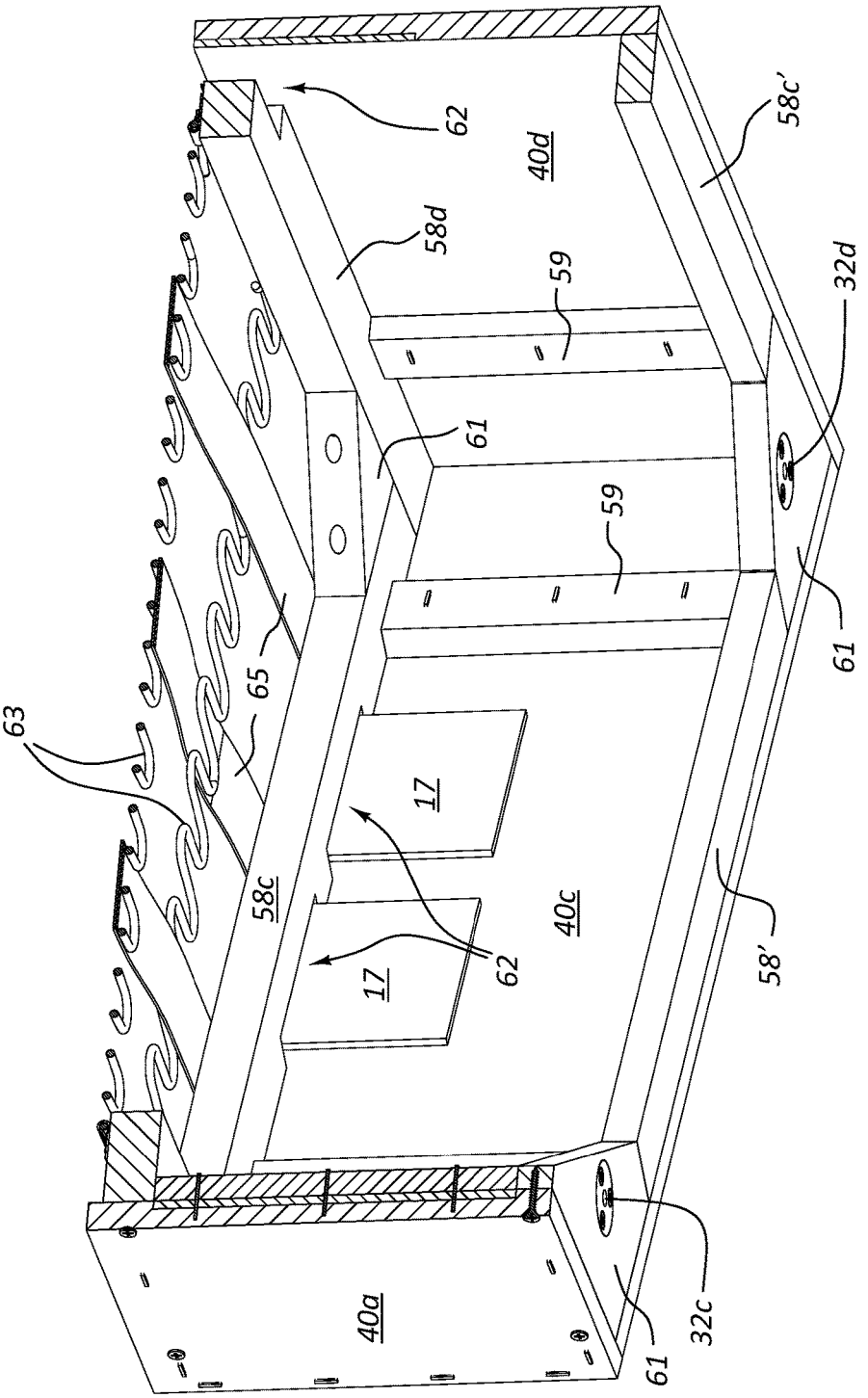


FIG. 11

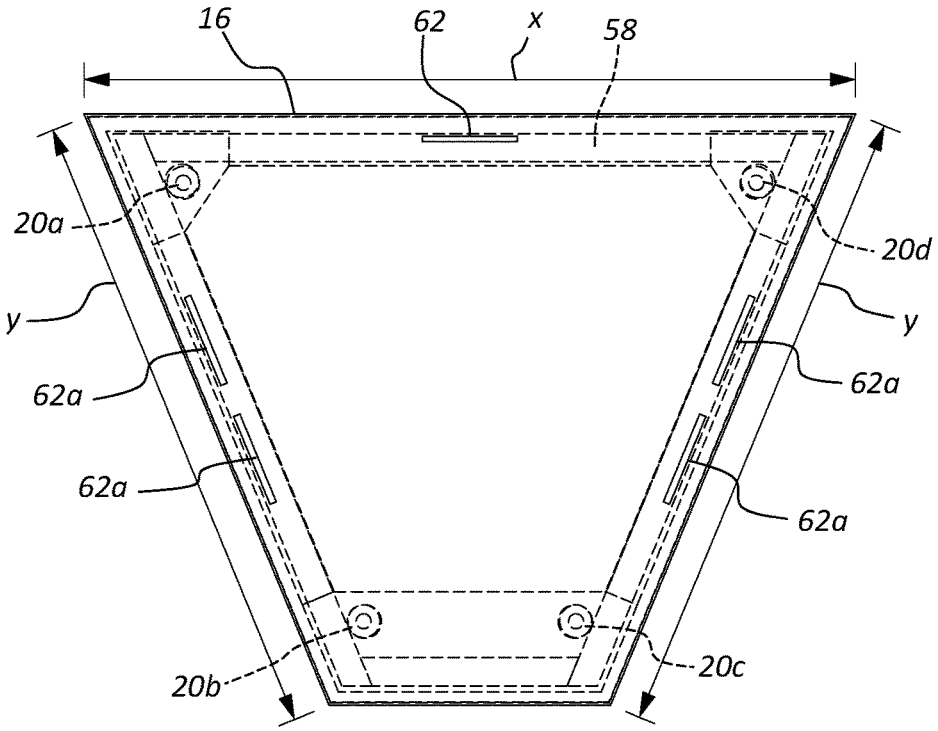


FIG. 12

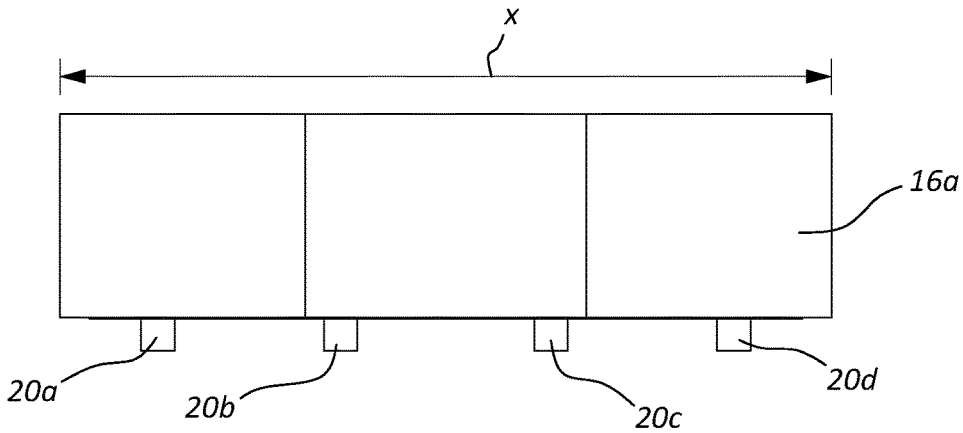


FIG. 13

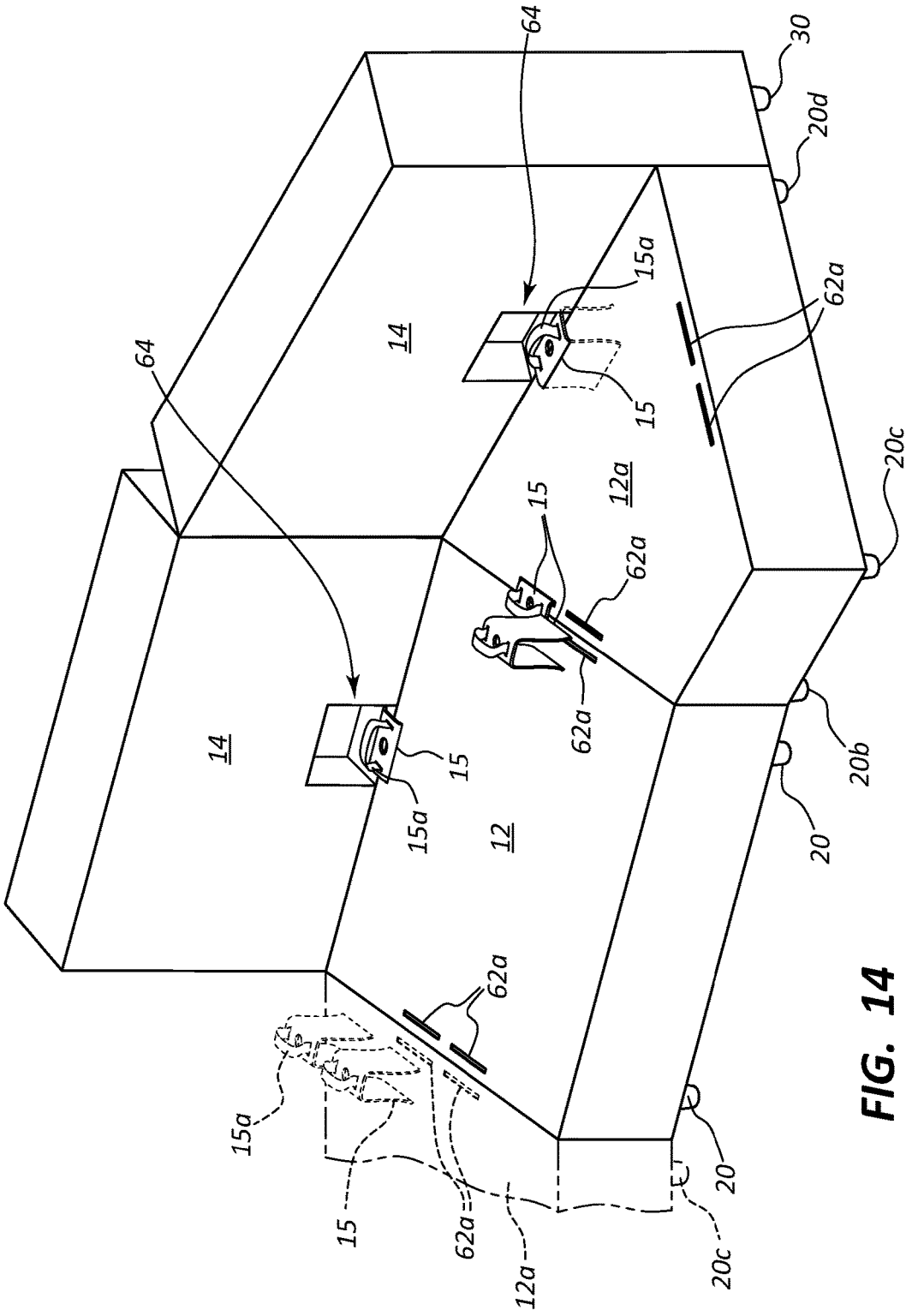

64
30
20d
15a
62a
14
64
15
20c
12a
15
62a
62a
14
15
15a
12
20b
20
62a
15a
15
62a
12a
20c
20

FIG. 14

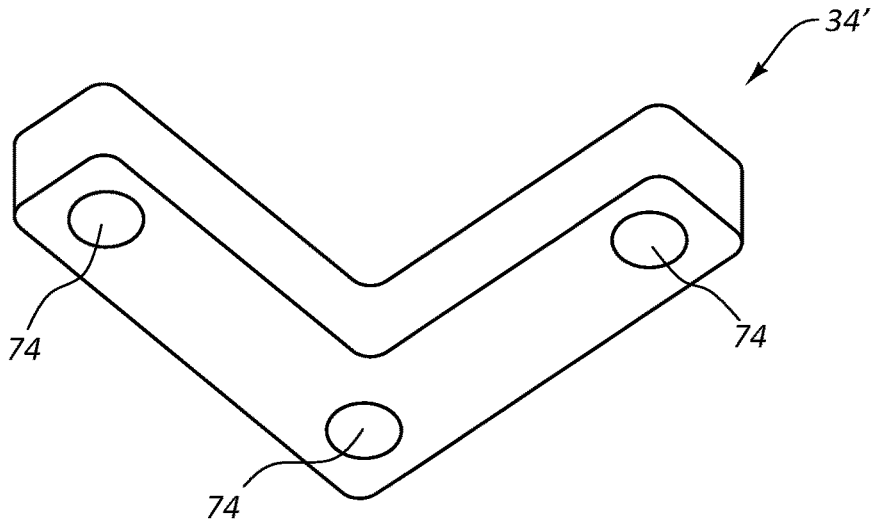


FIG. 15

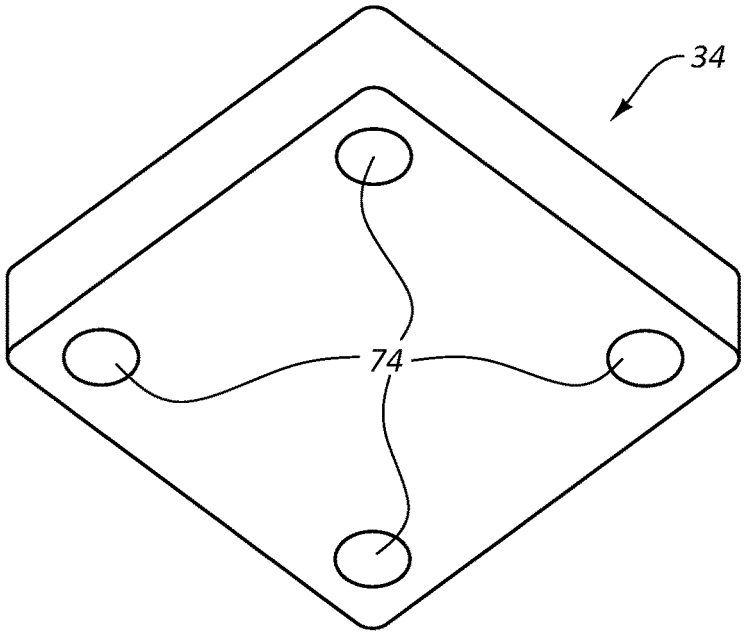


FIG. 16

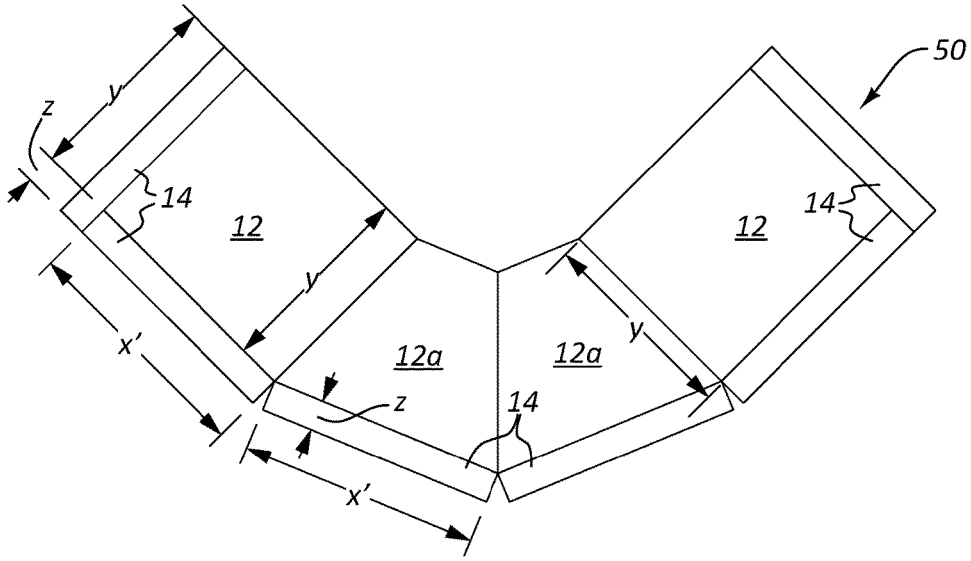


FIG. 17A

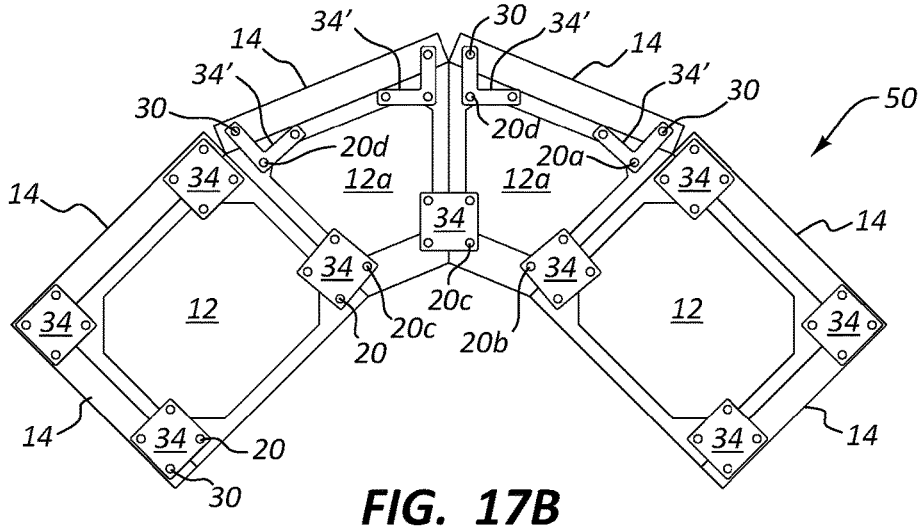


FIG. 17B

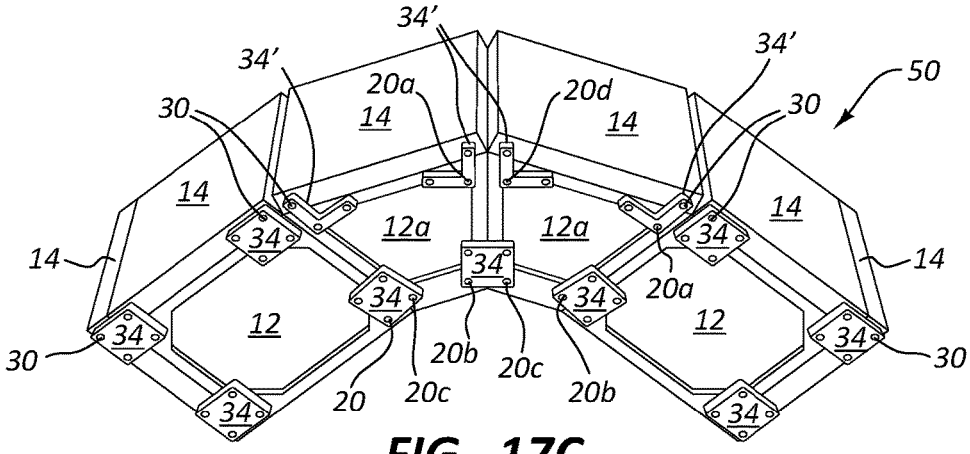


FIG. 17C

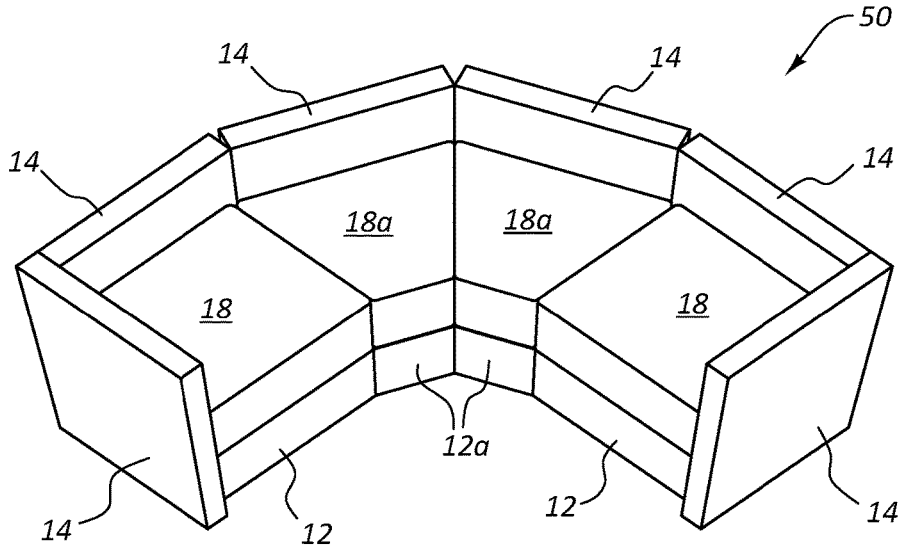


FIG. 18A

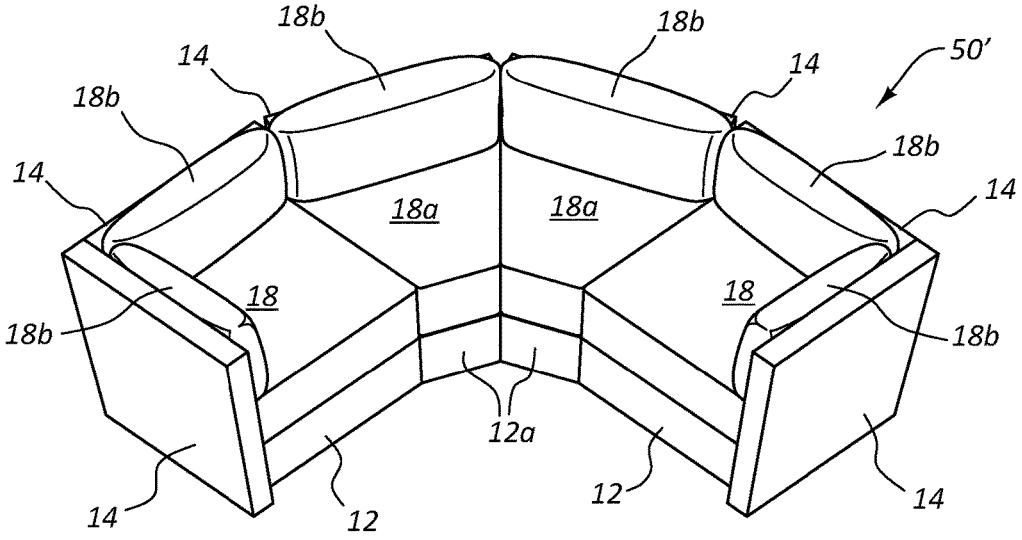


FIG. 18B

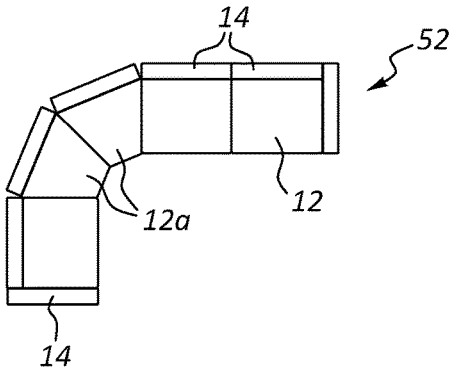


FIG. 19A

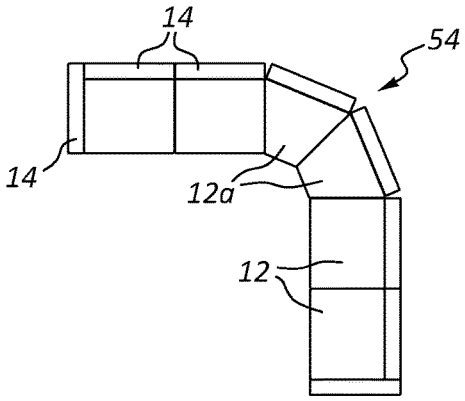


FIG. 19B

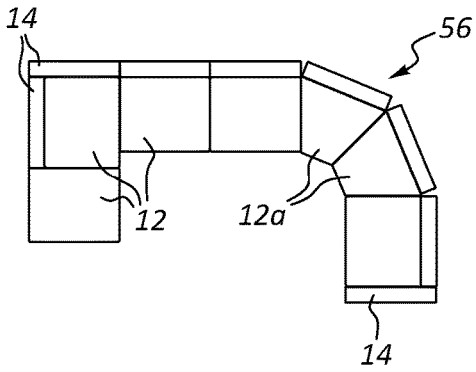


FIG. 19C

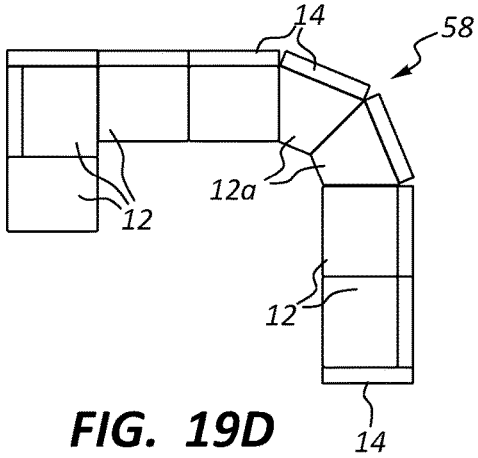


FIG. 19D

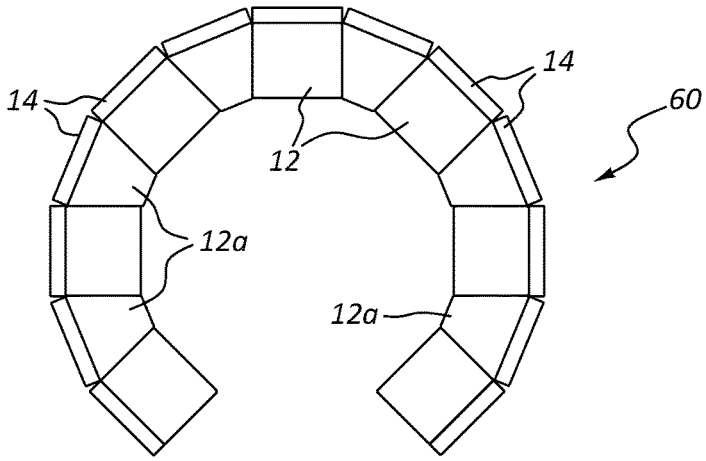


FIG. 19E

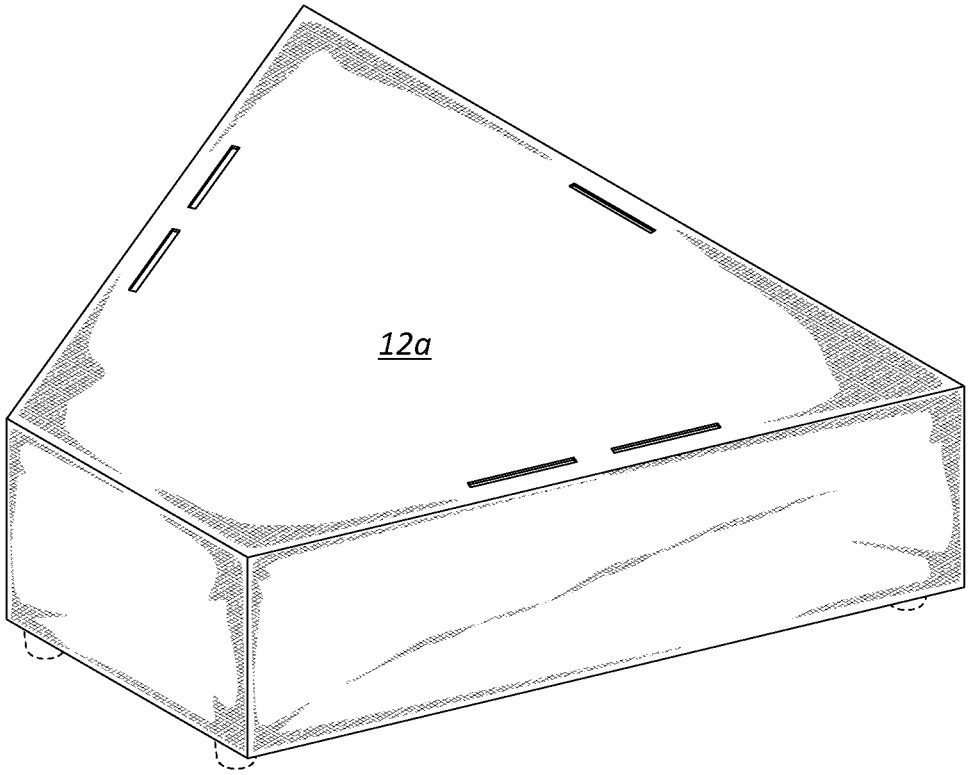


FIG. 20A

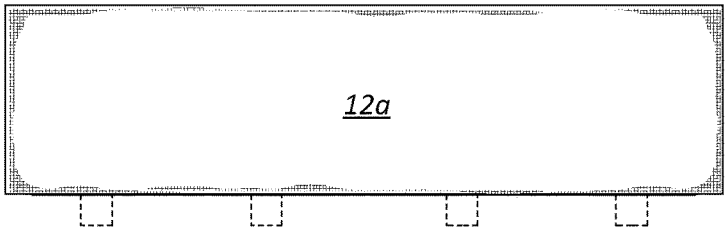


FIG. 20C

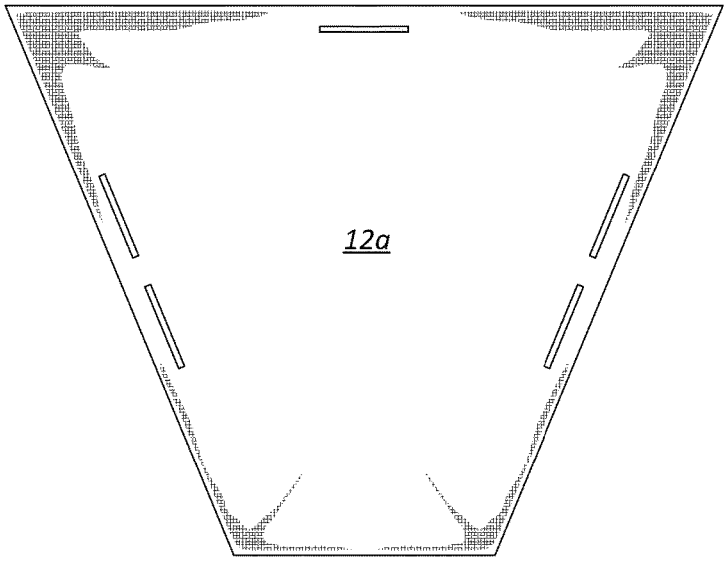


FIG. 20B

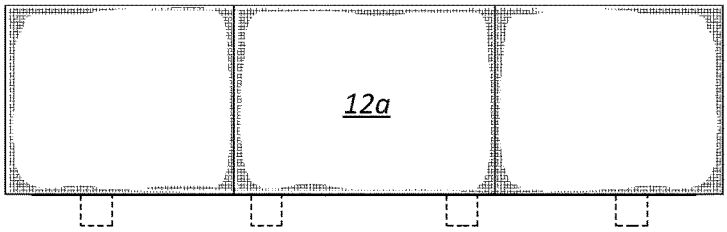


FIG. 20D

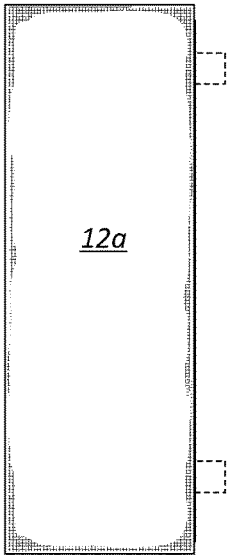


FIG. 20E

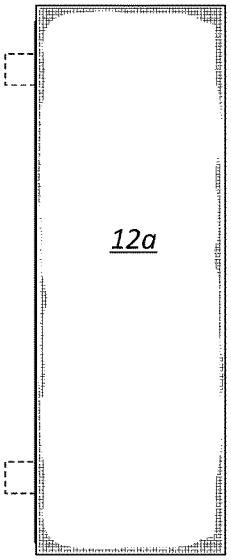


FIG. 20F

MODULAR FURNITURE ASSEMBLY CORNER SEATING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of U.S. Patent Application 62/354,426 filed Jun. 24, 2016, and entitled MODULAR FURNITURE ASSEMBLY CORNER SEATING SYSTEM, which is incorporated herein by reference in its entirety.

SPECIFICATION

1. Field of the Invention

[0002] This invention is in the field of modular furniture.

2. Background

[0003] Modular furniture is useful in a variety of settings. Consumers eager to have options for arranging furniture in multiple ways can purchase modular furniture which will allow them to set up furniture assemblies in one of a plurality of different of manners.

[0004] In addition, many traditional couches and other furniture items cannot be moved into tight areas of a home or apartment complex, including, for example, basements, narrow hallways, or upstairs rooms. Thus, it is often desirable to produce furniture that can be conveniently assembled, disassembled and then reassembled in one of a variety of configurations, thus, providing versatility, diversity, and convenience for transport and set up.

[0005] Furniture assemblies have been developed in the past that provide the user with the opportunity to set up furniture in various different manners and to conveniently transport one portion of the furniture assembly at a time, rather than requiring the purchaser to negotiate a tight hallway with an entire sofa, for example.

[0006] However, while numerous configurations are possible while using the modular members available, there is still a continuing need for additional differently configured modules that would further increase the variety of configurations possible.

BRIEF SUMMARY

[0007] The present disclosure relates to a modular furniture assembly including a wedge shaped base. The wedge shaped base includes geometric relationships so as to be compatible with the bases and transverse members of the modular furniture assemblies described in U.S. Pat. Nos. 7,213,885; 7,419,220; 7,547,073; 7,963,612; 8,783,778; 9,277,826; and U.S. application Ser. Nos. 14/993,533; and 15/058,656, each of which is incorporated herein by reference, and which disclose modular furniture assemblies in which a base and a transverse member, and/or multiple bases and transverse members, can be used in a variety of different configurations in light of their novel dimensions and relationships, such as (x)=(y)+(z), wherein (x) is the length of the base and is substantially equal to the length of the transverse member, (y) is the width of the base, and (z) is the width of the transverse member.

[0008] In one aspect, the present invention is directed to a modular furniture assembly including a transverse member having a length (x') and a width (z). The assembly further includes a wedge shaped base which enables convenient corners and angles in furniture assemblies, the wedge shaped base being configured such that the wedge shaped base has a length (x) at a back thereof and an angled side length (y). The wedge shaped base and transverse member have a defined special relationship in which the length (x) of the back of the wedge shaped base is substantially equal to the length (x') of the transverse member, and the length (x) of the back of the wedge shaped base is substantially equal to the sum of the length of the angled side (y) of the wedge shaped base and the width (z) of the transverse member, such that different furniture configurations can be formed. The wedge shaped base enables a variety of corners and angles in furniture configurations which further enhance the usefulness of the modular furniture assemblies.

[0009] Another aspect of the present invention is directed to a modular furniture assembly including: (1) first and second transverse members, each having a length (x') and a width (z); (2) a wedge shaped base configured such that the wedge shaped base has a length (x) at a back thereof and an angled side length (y); and (3) a rectangular base configured such that the rectangular base has a length (x) and a width (y). The wedge shaped base, the rectangular base, and the transverse members have a defined spatial relationship in which: (a) the length (x) of the back of the wedge shaped base and the length (x) of the rectangular base are each substantially equal to the length (x') of each of the transverse members; (b) the length (x) of the back of the wedge shaped base and the length (x) of the rectangular base are each substantially equal to the sum of the length of the angled side (y) of the wedge shaped base and the width (z) of each of the transverse members such that (x)=(y)+(z), and (x')=(y)+(z) such that different furniture configurations can be formed.

[0010] As a result of this geometric or spatial relationship, the length (x) of the back of the wedge shaped base is equal to the length (x) of the rectangular base, and (x) is also substantially equal to the length (x') of the transverse member, and (x) is also substantially equal to the sum of (y) and (z), wherein (y) is the length of the angled side of the wedge shaped base and (y) is also the width of the rectangular base. The first transverse member is selectively coupleable to the back of the wedge shaped base, the rectangular base is selectively coupleable to the angled side of the wedge shaped base, and the second transverse member is selectively coupleable to the rectangular base (e.g., to the back or side thereof)

[0011] Another aspect of the present invention is directed to a modular furniture assembly comprising a plurality of transverse members, each having a length (x') and a width (z), first and second wedge shaped bases, and a rectangular base. Each wedge shaped base is configured such that the wedge shaped bases each have a length (x) at a back thereof and an angled side length (y). The rectangular base has a length (x) and a width (y). The wedge shaped bases, the rectangular base, and the transverse members have a defined spatial relationship in which: (a) the length (x) of the back of each wedge shaped base and the length (x) of the rectangular base are each substantially equal to the length (x') of each of the transverse members; (b) the length (x) of the back of each wedge shaped base and the length (x) of the rectangular base are each substantially equal to the sum of (y) and (z), wherein (y) is both the length of the angled side of each wedge shaped base and the width of the rectangular base, and (z) is the width of each of the transverse members, such that (x)=(y)+(z), and (x')=(y)+(z). This spatial relation-

ship allows different furniture configurations to be formed. The first wedge shaped base is selectively coupleable to the second wedge shaped base along corresponding angled sides of the first and second wedge shaped bases so as to form a 90° bend across the first and second wedge shaped bases, and the rectangular base is selectively coupleable to a remaining angled side of the wedge shaped base, while the plurality of transverse members are selectively coupleable to the wedge shaped bases or the rectangular base (e.g., as backrests or armrests therefor).

[0012] Another aspect of the present invention is directed to a modular furniture assembly forming a convenient angle, the assembly comprising at least four transverse members, each having a length (x') and a width (z), first and second wedge shaped bases, and first and second rectangular bases. Each wedge shaped base is configured such that the wedge shaped bases each have a length (x) at a back thereof and an angled side length (y). Each rectangular base has a length (x) and a width (y). The wedge shaped bases, the rectangular bases, and the transverse members have a defined spatial relationship in which: (a) the length (x) of the back of each wedge shaped base and the length (x) of each rectangular base are each substantially equal to the length (x') of each of the transverse members; (b) the length (x) of the back of each wedge shaped base and the length (x) of each rectangular base are each substantially equal to the sum of (y) and (z), wherein (y) is both the length of the angled side of each wedge shaped base and the width of each rectangular base, and (z) is the width of each of the transverse members, such that (x)=(y)+(*z*), and (x')=(y)+(*z*). This spatial relationship allows different furniture configurations to be formed, e.g., one in which the two wedge shaped bases, the two rectangular bases, and the four transverse members collectively form a modular furniture assembly that aligns along first and second axes, wherein the second axis is transverse to the first axis (e.g., a corner couch modular furniture assembly).

DESCRIPTION OF THE DRAWINGS

[0013] To further clarify the above and other advantages and features of the present invention, a more particular description of the invention will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. It is appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

[0014] FIG. **1** is a perspective view of an exemplary modular furniture assembly including a rectangular base and a transverse member;

[0015] FIG. **2** is an exploded and cut-away view of the modular furniture assembly of FIG. **1**, showing the coupling of the transverse member to the base member;

[0016] FIG. **3** shows a front perspective view of an exemplary modular furniture assembly that can be formed using the wedge shaped base(s) of the present invention;

[0017] FIG. **4** shows a side perspective view of the modular furniture assembly of FIG. **3**;

[0018] FIG. **5** shows another side perspective view of the modular furniture assembly of FIG. **3**, with the cushion removed to better show the wedge shaped base and the transverse member;

[0019] FIG. **6** is a top plan view of the modular furniture assembly of FIG. **5**;

[0020] FIG. **7** is an exploded view of an exemplary frame assembly of a wedge shaped base, with inner and outer fabric covers removed from the frame assembly;

[0021] FIG. **8** is a perspective view of the frame assembly of FIG. **7** with the fabric covers removed;

[0022] FIG. **9** is a bottom perspective view of the frame assembly of FIG. **8** showing the underside of the frame assembly of FIG. **8**;

[0023] FIG. **10** shows an exploded view of exemplary components that can be used in assembling the frame assembly of FIG. **8**;

[0024] FIG. **11** is a cut-away bottom perspective view into the frame assembly of FIG. **8**;

[0025] FIG. **12** is a top plan view of the frame assembly of FIG. **8**, with feet and other hidden structures shown in phantom;

[0026] FIG. **13** is a front view of the frame assembly of FIG. **8**;

[0027] FIG. **14** is a perspective view showing couplers that can be used to couple a wedge shaped base to another base (e.g., a rectangular shaped base), and to couple the bases to corresponding transverse members.

[0028] FIG. **15** is a perspective view of an exemplary mounting platform that can be used to couple the wedge shaped base to another base (e.g., rectangular or wedge shaped), and/or to a transverse member;

[0029] FIG. **16** is a perspective view of another exemplary mounting platform that can be used to connect a rectangular or wedge shaped base to another base (e.g., rectangular or wedge shaped), and/or a transverse member;

[0030] FIG. **17**A shows a top plan view of an exemplary modular furniture assembly including one or more wedge shaped bases, one or more rectangular bases, and one or more transverse members;

[0031] FIG. **17**B is a bottom plan view of the modular furniture assembly of FIG. **17**A, showing use of the mounting platforms of FIGS. **15-16** to selectively couple the bases and transverse members together into the modular furniture assembly;

[0032] FIG. **17**C is a bottom perspective view of the modular furniture assembly of FIG. **17**A;

[0033] FIG. **18**A is a front perspective view of the modular furniture assembly of FIG. **17**A;

[0034] FIG. **18**B is a perspective view similar to that of FIG. **18**A, but showing the addition of cushions positioned against the transverse members;

[0035] FIGS. **19**A-**19**E are top plan views of various additional possible modular furniture assemblies that can be formed from one or more wedge shaped bases, one or more rectangular bases, and one or more transverse members;

[0036] FIGS. **20**A-**20**F reflect views of a wedge shaped base **12***a* of the present invention, wherein any broken lines are shown for environmental purposes only;

[0037] FIG. **20**A is a perspective view of an embodiment of a wedge shaped base **12***a* of the present invention;

[0038] FIG. **20**B is a top view of the wedge shaped base of FIG. **20**A;

[0039] FIG. **20**C is a rear view of the wedge shaped base of FIG. **20**A;

[0040] FIG. **20**D is a front view of the wedge shaped base of FIG. **20**A;

[0041] FIG. **20**E is a right side view of the wedge shaped base of FIG. **20**A; and

[0042] FIG. **20**F is a left view of the wedge shaped base of FIG. **20**A.

DETAILED DESCRIPTION

[0043] The invention relates to a modular furniture assembly that can be assembled, disassembled, rearranged, moved and cleaned in a quick and efficient manner with minimal effort. The invention further relates to modular furniture assemblies that have a spatial relationship such as those described U.S. Pat. Nos. 7,213,885; 7,419,220; 7,547,073; 7,963,612; 8,783,778; 9,277,826; U.S. application Ser. Nos. 14/993,533; and 15/058,656, each of which is incorporated herein by reference, which enable a user to form a number of different furniture assemblies. The above referenced patents and applications describe such systems assembled from one or more bases (e.g., rectangular bases) and one or more transverse members. The present invention increases the utility of such modular furniture assemblies by providing a wedge shaped base compatible therewith. In particular, the modular furniture assemblies include at least one transverse member having a length (x') and a width (z), and a wedge shaped base with a length at the back (x) and an angled side length (y), wherein (x) is substantially equal to (x'), and wherein (x) is substantially equal to (y)+(z). This configuration provides convenient angling and rounding of corners as shown in the Figures.

[0044] FIG. **1** illustrates an exemplary embodiment of a modular furniture assembly **10**, such as those described in the above referenced patents and applications. In the illustrated embodiment, modular furniture assembly **10** comprises a rectangular base **12** and a transverse member **14** detachably coupled to rectangular base **12** by a coupler **15** (FIG. **2**). Base **12** and transverse member **14** are adapted to be detachably coupled to each other in a variety of ways and configurations so as to form a variety of unique and custom furniture assemblies. Further, rectangular base **12** and transverse member **14** are sized and configured according to a defined spatial relationship.

[0045] The spatial relationship between rectangular base **12** and transverse member **14** enables the formation of a variety of different types, sizes and configurations of furniture assemblies. In this embodiment, rectangular base **12** has a length (x) and a width (y), wherein the length (x) of rectangular base **12** is greater than the width (y) of base **12**, and transverse member **14** has a length (x) and a width (z), wherein the length (x') of transverse member **14** is greater than the width (z) of transverse member **14**. In the illustrated embodiment, rectangular base **12** and transverse member **14** are configured such that the length (x) of base **12** is substantially equal to the length (x) of transverse member **14** and the length (x) of base **12** is substantially equal to the sum of the width (y) of rectangular base **12** and the width (z) of transverse member **14**. As such, (x) is substantially equal to (y)+(z).

[0046] Furthermore, the height (h') of transverse member **14** is substantially greater than the height (h) of base **12**, such that transverse member **14** can be conveniently employed as a backrest or armrest while base **12** is employed as a seat. As shown in FIG. **2**, rectangular base **12** comprises a removable cushion **18**. Cushion **18** is configured to be mounted on a frame assembly **16** of rectangular base **12** so as to provide a useful and comfortable sitting area for a user. Cushion **18** has the same length and width dimensions (x) and (y) as underlying frame assembly **16**, so that both share the (x) and (y) length and width dimension characteristics. Cushion **18** can be easily mounted on or removed from frame assembly **16**, providing easy access to coupler **15**.

[0047] FIGS. **3-6** illustrate an exemplary modular furniture assembly **10***a* according to the present invention, and which includes a spatial relationship between the components thereof that is compatible with the spatial relationship of modular furniture assembly **10**, described above. Assembly **10***a* is shown as including a wedge shaped base **12***a*, and a transverse member **14** (FIG. **4**). The transverse member **14** of FIGS. **3-6** may be identical to transverse member **14** described above in conjunction within FIGS. **1-2**. Couplers **15** such as those described above in conjunction with FIGS. **1** and **2** may likewise be used to selectively couple wedge shaped base **12***a* with transverse member **14**, to couple wedge shaped base **12***a* to a rectangular base **12**, to another wedge shaped base **12***a*, or any combination thereof.

[0048] As perhaps best seen in FIG. **6**, wedge shaped base **12***a* and transverse member **14** are sized and configured according to a defined spatial relationship in which wedge shaped base **12***a* has a length (x) at a back thereof and an angled side length (y), wherein the length (x) of the back of wedge shaped base **12***a* is greater than the angled side length (y) of wedge shaped base **12***a*, and transverse member **14** has a length (x) and a width (z), as described above, wherein the length (x) is substantially equal to the length (x') of transverse member **14** and the length (x) of the back of wedge shaped base **12***a* is substantially equal to the sum of the length (y) of the angled side of wedge shaped base **12***a* and the width (z) of transverse member **14**. As such, (x) is substantially equal to (y)+(z). This relationship remains true for both the rectangular base **12** and transverse member **14**, and the wedge shaped base **12***a* and transverse member **14**, as will be apparent. In other words (x) is thus equal to both the length of the back of the wedge shaped base **12***a*, and equal to the length of rectangular base **12**. Similarly, it will be apparent that (y) is thus equal to both the length of the angled side(s) of the wedge shaped base **12***a*, and equal to the width of the rectangular base **12**. It will also be apparent that (x) is also equal or substantially equal to (x'), the length of transverse member **14**, and (x) is equal to the sum of (y) and (z).

[0049] Because the wedge shaped base **12***a*, the rectangular base **12**, and the transverse member all incorporate the (x)=(y)+(z) spatial relationship, the wedge shaped base **12***a* can be incorporated into a furniture assembly including rectangular shaped bases to be coupled thereto (e.g., at either or both angled sides, or even along the back), to form a corner, bend, curve or other shape within couch or other modular furniture assembly being assembled. The wedge shaped base thus provides an additional degree of freedom to construct furniture configurations not possible using only rectangular bases and transverse members.

[0050] FIGS. **3-6** illustrate these dimensions (x), (y), (z), and (x') associated with wedge shaped base **12***a* and transverse member **14**. In addition, similar to rectangular base **12**, wedge shaped base **12***a* can be employed as a seat, and includes a removable cushion **18***a* placed thereon (e.g., wedge shaped like base **12***a*). Cushion **18***a* is configured to be mounted on a frame assembly **16***a* of wedge shaped base **12***a* so as to provide a useful and comfortable sitting area for a user. Cushion **18***a* can be easily mounted on or removed

from frame assembly **16***a*, providing easy access to a coupler **15**, e.g., used for selectively coupling wedge shaped base **12***a* to one or more of transverse member **14**, a rectangular base **12**, or another wedge shaped base **12***a*. Another cushion **18***b* can be provided e.g., leaned against the upper portion of transverse member **14**, which may not be used as a seat, but as a cushion against the backrest or armrest provided by the upper portion of transverse member **14**.

[0051] Frame assembly **16***a* also comprises a plurality of feet (e.g., **20***a*-**20***d*) mounted on frame assembly **16***a*, which feet function in conjunction with one or more foot couplers (e.g., foot couplers **34'** and/or **34**) to aid in selectively coupling the wedge shaped base **12***a* to another base (whether wedge shaped or rectangular), to a transverse member **14**, or both.

[0052] As perhaps best seen in FIG. **6**, the angle between the two angled sides (y) of the wedge shaped base **12***a* is at or about 45° relative to one another, so as to provide a 45° bend (or approximately 450 bend) in the seating surface into which the wedge shaped base **12***a* is incorporated. In other embodiments, other angles may alternatively be possible (e.g., 30°, 60°, or any angle therebetween). Angles other than 30°, 45° or 60°, such as greater than 0° and less than 90°, or from 90° to 180° could alternatively be provided. Additive versions of such angles could also be provided. For example, a 135° bend in a furniture assembly (e.g., a couch) can be achieved with three 45° wedges, or a single wedge shaped base could be provided with angled sides at **1350** relative to one another, effectively consolidating three 45° wedges into one component. It will be apparent from this description that other corner seat configurations with an additive angle could be provided (e.g., 90°, etc.). FIGS. **17**A-**18**B show an example of how two 450 wedge shaped bases can be coupled together to provide a 90° bend in the resulting couch or other furniture assembly. Eight 45° wedge shaped bases could be used to form a circular modular furniture assembly. Numerous other varieties are also possible.

[0053] As shown in FIG. **6**, the angled sides each have a length (y), and both sides are angled at 45°, for example, forming (about) a 45° angle therebetween. With equal length sides (y), the angle between either angled side (y) and the back (x) is 67.5°. The illustrated 45° angling is particularly beneficial, as one wedge shaped base can be used to provide a 45° bend in the furniture configuration, two such bases **12***a* can provide a 90° bend, three such bases **12***a* can provide a 135° bend, and so forth. Also apparent from FIG. **6**, the wedge shape of base **12***a* (and frame assembly **16***a* and cushion **18***a*) is shown as generally triangular, or more particularly, generally a truncated triangle (e.g., a triangle in which the 45° angle apex has been removed). Such a truncated triangle of FIG. **6** may also be described as generally trapezoidal in shape.

[0054] FIGS. **7-13** illustrate an exemplary embodiment of a frame assembly **16***a* of wedge shaped base member **12***a*, illustrating an example of how interior components thereof may be configured. It will be apparent that the illustrated and described configurations are merely exemplary, such that numerous other configurations are of course possible, in keeping with the above described geometric or spatial relationships. In the illustrated embodiment, frame assembly **16***a* is shown as including at least one removable cover **22**. Wedge shaped base **10***a* is thus comprised of a frame **36** (or frame assembly **16***a*) and a removable cover **22**. Removable cover **22** is configured to provide additional protection for frame **36** of frame assembly **16***a*, e.g., in the event that a soda, beverage, or other item is spilled on frame assembly **16***a*. For example, cover **22** prevents damage to the structure of frame **36**, isolating the spill to cover **22**, e.g., which may largely absorb the spill. Cover **22** is easily removed for laundering, and replacement. The removable characteristic of cover **22** also allows a user to change the color, pattern, or other aesthetic characteristics of the visible exterior of the frame assembly **16***a*, as desired. Cover **22** also covers frame members **40***a*-**40***d* of frame **36** for aesthetics. Cover **22** may include both an inner cover and an outer cover.

[0055] Cover **22** is detachably coupled to frame assembly **16***a* through a removable securing mechanism, such as a hook and pile mechanism, e.g. VELCRO, a zipper, or other suitable mechanism. Frame assembly **16***a* includes a plurality of abutting surfaces **26***b*-**26***d* (the angled sides and back), associated with frame members **40***b*-**40***d*. The front surface associated with frame member **40***a* is not typically abutted against another base or a transverse member, although such could be possible, if desired. Frame members **40***a*-**40***d* may be made from wood, metal, composite, plastic, or any other structural material or combination of suitable materials. In the illustrated embodiment, abutting surfaces **26***b*-**26***d* are respective substantially flat vertical surfaces configured to be positioned adjacent and abut the substantially flat abutting vertical surface **28** (FIG. **5**) of transverse member **14**, or abutting surfaces of other bases **12***a*, or **12**. Coupler **15** can be used to couple wedge shaped base **12***a* to a transverse member **14**, another wedge shaped base **12***a*, or a rectangular shaped base **12** by bringing the corresponding abutting surfaces together and inserting the coupler **15** into the provided apertures **62***a* (see FIG. **14**).

[0056] Returning to FIGS. **7-13**, frame assembly **16***a* further comprises a support member **58** that is mounted between frame members **40***a*-**40***d*. Support member **58** extends around at least a portion of an interior perimeter of frame **36** defined by frame members **40***a*-**40***d*. In another embodiment, support member **58** may extend over the entire width, or substantially the entire width of frame **36**, similar to the support member **58** described in U.S. Pat. No. 9,277,826, incorporated herein by reference, for example. For example, in one embodiment, support member **58** is mounted on a plurality of upstanding posts **59** positioned within the cavity defined by frame members **40***a*-**40***d*. As shown, support member **58** comprises a plurality of structural members (e.g., elongate members **58***a*-**58***d*), extending around the interior perimeter defined by frame members **40***a*-**40***d*. As shown, support member **58** is disposed along a top of frame assembly **16***a*. An analogous support member **58'** formed from a plurality of structural members **58***a'*-**58***d'* is positioned along the bottom of frame assembly **16***a*, as perhaps best seen in FIGS. **9-10**. One or more triangular corner supports **61** can be provided as part of either support member **58** or support member **58'**, as desired. Support members **58** and/or **58'** may comprise any suitable structural material, such as wood metal, plastic, or the like.

[0057] As seen in FIGS. **7-13**, structural members **58***b*, **58***c*, and **58***d* (those members along the angled sides and the back of frame assembly **16***a*) each include one or more grooves **62** formed therein. Grooves **62** are positioned along the perimeter of support member **58** and are sized so as to allow a portion of coupler **15** to be received therein. Grooves **62** are positioned in support member **58** so as to provide a

variety of coupling locations on wedge shaped base **12***a* for the coupling of transverse member **14** to wedge shaped base **12***a* and/or coupling of wedge shaped base **12***a* to another base (either rectangular or wedge shaped).

[0058] Grooves **62** each form a portion of an aperture in frame assembly **16***a*, as perhaps best seen in FIGS. **7-8**. As seen in FIG. **7**, cover **22** includes apertures **62***a* aligned with each of grooves **62**, so as to easily allow a portion of couplers **15** to be inserted through apertures and grooves **62***a* and **62**, respectively, coupling wedge shaped base to a transverse member **14**, or to another base. In the illustrated embodiment, two grooves **62** are positioned adjacent respective abutting surfaces **26***b* and **26***c*, corresponding to length (y) along the angled sides of the wedge shaped base **12***a*, while one groove **62** is positioned adjacent abutting surface **26***d*, along the back of wedge shaped base **12***a*. In the illustrated embodiment, no groove is formed in the front structural member **58***a*, corresponding to the front of the wedge shaped base **12***a*, as typically no transverse member or other base is coupled thereto.

[0059] The two grooves **62** positioned adjacent respective abutting surfaces **26***b* and **26***c* enable the positioning of transverse member **14** (or a base) in two different locations adjacent each of abutting surfaces **26***b* and **26***c*, which enables the formation of different furniture configurations. Transverse member **14** can be positioned and coupled to wedge shaped base **12***a* by coupler **15** in at least five different positions in relation to wedge shaped base **12***a*, as there are five different grooves **62**. Coupling can be accomplished, for example, by aligning an aperture of transverse member **14** with any of grooves **62** and placing a portion of coupler **15** in each of the aperture of the transverse member and the desired groove **62** of frame assembly **16***a*, as seen in FIG. **14**. Similarly, coupling another base **12***a* or **12** is similarly accomplished by placing a portion of coupler **15** in each of the aperture of the base (**12***a* or **12**) and the groove of frame assembly **16***a*, as shown in FIG. **14**. Examples of the apertures of the transverse member **14** are described in additional detail in U.S. Pat. No. 9,277,826, incorporated herein by reference (e.g., see FIGS. **3**, and **5**A-**5**C thereof).

[0060] As described in U.S. Pat. No. 9,277,826, coupler **15** can comprise an elongate, U-shaped member configured to be positionable within the aperture of transverse member **14** and one of grooves **62** of frame assembly **16***a*, or when two bases are to be coupled together, within one of the grooves **62** of a wedge shaped base **12***a* and one of the grooves **62** of a second base (e.g., another wedge shaped base **12***a* or a rectangular base **12**). Coupler **15** is further configured to engage the inner surfaces of frame **36** of frame assembly **16***a* (e.g., engaging against MDF members **17** associated with frame members **40***b*-**40***d*), sandwiching a portion of transverse member **14** and a portion of frame assembly **16***a* together between portions of coupler **15**. MDF members **17** serves to reinforce frame assembly **16***a* in the region when coupling occurs, acting as a sort of grind plate which coupler **15** slides over during coupling. When coupling two bases together, the coupler similarly sandwiches portions of both frames between the legs of the coupler **15**, as will be apparent from FIG. **14**.

[0061] Coupler **15** is configured to substantially prevent movement of the upper portion of whatever two components are coupled, e.g., transverse member **14** in relation to wedge shaped base **12***a*, or rectangular base **12**, or to prevent movement of the upper portions of two coupled bases (any combination of **12** and **12***a*), as the case may be. In this manner, coupler **15** substantially prevents movement of a first component (transverse member **14**, base **12**, or wedge shaped base **12***a*) in at least a first direction with respect to any base coupled therewith (e.g., a wedge shaped base **12***a* or a rectangular shaped base **12**). Such prevention of movement is provided whether the coupled structures are a transverse member and a base (whether rectangular or wedge shaped), and where two bases (whether of the same shapes, or different shapes) are coupled together using coupler **15**. Additional details of coupler **15** are disclosed in the above referenced patents and applications, incorporated herein by reference, as well as U.S. patent application Ser. No. 15/270,339, filed Sep. 20, 2016, which is also incorporated herein by reference in its entirety.

[0062] As shown in FIG. **14**, coupler **15** includes a loop handle **15***a* secured to a top of coupler **15**, facilitating easier removal of couplers **15** when a user desires to reconfigure the modular components of the modular furniture assembly.

[0063] Returning to the description of frame assembly **16***a*, FIGS. **7-11** show how one or more serpentine springs or zig-zag springs **63** (used interchangeably herein) can be provided, e.g., extending between structural members **58***a* and **58***d*. A plurality of straps **65** can be provided, e.g., extending between structural members **58***b* and **58***c*. As shown in FIG. **8**, straps **65** are weaved alternatingly above and below serpentine springs **63**, as they encounter each one. Straps **65** (e.g., formed of nylon or other suitable material) are shown as being stapled to structural members **58***b* and **58***c*. Springs **63** are secured to structural members **58***a* and **58***d* through any suitable mechanism, e.g., the illustrated hooks **66**, or the like. While springs **63** are shown extending from the front structural member **58***a* to the back structural member **58***d*, and straps **65** are shown extending between the two angled side structural members **58***b* and **58***c*, it will be appreciated that the location of the springs **63** and straps **65** could be switched, and/or numerous other changes could also be made.

[0064] While exemplary internal components of frame assembly **16***a* have been shown and described in some detail, it will be appreciated that the illustrated configuration is merely exemplary, and numerous other configurations could alternatively be provided. Any of the individual features described herein in conjunction with the frame assembly **16***a* may be employed in any embodiment individually, with or without any of the other features described in conjunction with frame assembly **16***a*.

[0065] FIG. **14** illustrates how couplers **15** are used to couple wedge shaped base **12***a* to an adjacent rectangular base **12**, and how both are coupled to transverse members **14** at the backsides of the bases **12***a*, **12**, also using couplers **15**. The aperture **64** seen in transverse member **14** is used as one leg of U-shaped coupler **15** is pressed into aperture **62***a* (and associated groove **62**) of base **12***a*, while the other leg of coupler **15** is received into a slot below aperture **64**, so that coupler **15** sandwiches a portion of the frame of base **12***a* and a portion of the frame of transverse member **14** between the legs of coupler **15**. Once cushions **18** and **18***a* (associated with bases **12** and **12***a*) are positioned over frame assemblies **16** and **16***a*, apertures **64** of transverse member **14** are hidden. As described in further detail below, the legs of the bases and transverse members are also coupled together at a lower portion thereof, e.g., using foot couplers **34**, or **34'**, of FIGS. **15-16**.

[0066] In addition to coupling along an upper portion of wedge shaped base **12***a*, provided by coupler **15**, a mechanism is also provided for coupling a lower portion of base **12***a* (or **12**) with another base (**12** or **12***a*) or for coupling to a transverse member **14**. Referring to FIGS. **15-16**, two exemplary foot couplers **34** and **34'** are shown. Foot coupler **34** shown in FIG. **16** may be substantially the same as that described in U.S. Pat. No. 9,277,826, for example. Both couplers include a plurality of apertures **74**. Foot coupler **34'** of FIG. **15** is shown as being generally L-shaped, with **3** apertures, while foot coupler **34** is shown with **4** apertures. As shown in FIGS. **17**B-**17**C, the L-shaped foot couplers **34'** are particularly configured for use at the back of wedge shaped base members **12***a* (adjacent length (x)), for coupling such base members **12***a* to transverse members **14**. Apertures **74** are sized and configured to receive a foot of any base **12***a*, **12** or transverse member **14** therein. Apertures **74** of foot coupler **34'** are sufficiently spaced apart, such that when a foot **30** from transverse member **14** is positioned in aperture an **74** and a back foot **20***a* or **20***d* from wedge shaped base **12***a* is positioned in another aperture **74** of the same coupler **34'**, transverse member **14** and wedge shaped base **12***a* are adjacent and in contact one with another, with transverse member **14** positioned along the back length (x) of wedge shaped base **12***a*. Coupler **34'** thus couples the two structures together, as transverse member **14** forms a backrest for wedge shaped base **12***a*.

[0067] The foot couplers **34**, **34'** are configured to substantially prevent movement of the bottom portion of transverse member **14** in relation to a coupled base **12***a* or **12**. When coupling bases (e.g., **12***a* or **12**) to one another, such prevention of relative movement of the coupled bases is also obtained. In this manner, the foot couplers substantially prevent movement of a coupled transverse member **14** or coupled base (**12***a* or **12**) in at least a second direction with respect to a given base **12***a* or **12** being coupled to. For example, coupler **15** substantially prevents movement of the middle portion of a coupled transverse member **14** or top portion of base **12***a*, **12** in at least a first direction, i.e., away from wedge shaped base **12***a*, while foot couplers **34** and **34'** substantially prevent movement of the bottom portion of transverse member **14**, a second base **12**, or a second base **12***a* in at least a second direction, i.e., towards a first base **12***a* to which such component is coupled by the foot coupler.

[0068] It will be apparent from the examples seen in FIGS. **17**B-**17**C that one or more of the apertures **74** of any given coupler **34**, **34'** are not necessarily used, such that some apertures may receive a foot (e.g., foot **30** of a transverse member, foot **20** of a rectangular base **12**, or one of feet **20***a*-**20***d* of a wedge shaped base **12***a*), while one or more other apertures **74** may remain empty, depending on the particular modular furniture assembly configuration desired. FIGS. **17**B-**17**C label several of the particular feet received within apertures **74** so as to illustrate this feature.

[0069] As will be appreciated by one of ordinary skill in the art, the foot couplers of the present invention do not need to be restricted as to the number of apertures **74** formed therein, nor the specific shapes shown. For example, a foot coupler of the present invention can be sized and configured to include any appropriate number of apertures, and any appropriate shape so as to couple the feet of a base (**12***a* or **12**) to another base (**12***a* or **12**), or to a transverse member **14**. In one embodiment, apertures **74** can comprise a tapered opening so as to enable a consumer to more easily insert a foot therein. Use of the L-shaped foot couplers **34'** as seen in FIG. **17**B prevent the foot couplers from extending outwardly past the vertical rear edge of the transverse members **14** coupled as backrest members. In other words, while a square or rectangular foot coupler **34** as seen in FIG. **16** could be used to make this coupling, one corner of the coupler **34** would then extend out past the edge of the overall couch or other furniture assembly, which is aesthetically undesirable, and or which creates a tripping hazard. The L-shaped foot coupler **34'** thus includes the same size and spacing of apertures as foot coupler **34**, but with one aperture removed. It will be apparent that a triangular shaped foot coupler (i.e., filling in the hypotenuse between the legs of coupler **34'**) could be provided, providing similar benefits as L-shaped foot coupler **34'**.

[0070] The modular furniture assemblies are assembled in a similar manner as described in U.S. Pat. No. 9,277,826, only that one or more wedge shaped bases are included within the assembly, increasing the variety of configurations that can be made. FIG. **17**A shows how two wedge shaped bases **12***a* can be coupled to one another, with a rectangular base **12** coupled on either side thereof. As shown, four transverse members **14** can be coupled to the back of each of bases **12***a*, **12**, while another two transverse members **14** can be coupled to the sides of rectangular bases **12**, forming armrests therefor. It will be apparent that were a wedge shaped base **12***a* forms an end of the couch or other furniture assembly (e.g., see FIG. **14**), a transverse member **14** can be coupled to form an armrest against the angled side (y) of such a wedge shaped base **12***a*.

[0071] FIGS. **18**A-**18**B shows front perspective views of the furniture assembly **50** seen in FIGS. **17**A-**17**B. In FIG. **18**B, the assembly is designated **50'**, as a plurality of cushions **18***b* (which could also be termed pillows) have been added, positioned against those transverse members **14** serving as backrests and armrests.

[0072] Because the furniture assemblies are modular, it will be apparent that numerous configurations other than those specifically illustrated can be formed, using any desired number of the three basic components (a wedge shaped base **12***a*, a rectangular base **12**, and a transverse member **14**). For example, FIG. **19**A illustrates a configuration of a modular furniture assembly **52** that can be formed using two wedge shaped bases **12***a*, three rectangular bases **12**, and seven transverse members **14**. FIG. **19**B shows another modular furniture assembly **54** that can be formed using two wedge shaped bases **12***a*, four rectangular bases **12**, and eight transverse members. FIG. **19**C shows another modular furniture assembly **56** that can be formed using two wedge shaped bases **12***a*, five rectangular bases **12**, and eight transverse members. FIG. **19**D shows another modular furniture assembly **58** that can be formed using two wedge shaped bases **12***a*, six rectangular bases **12**, and nine transverse members. FIG. **19**E shows another modular furniture assembly **60** that can be formed using six wedge shaped bases **12***a*, seven rectangular bases **12**, and thirteen transverse members. It will be apparent that numerous other configurations are also possible, so that the potential configurations are nearly limitless.

[0073] Numbers, percentages, ratios, or other values stated herein may include that value, and also other values that are about or approximately the stated value, as would be appreciated by one of ordinary skill in the art. A stated value should therefore be interpreted broadly enough to encom-

pass values that are at least close enough to the stated value to perform a desired function or achieve a desired result, and/or values that round to the stated value. The stated values include at least the variation to be expected in a typical manufacturing process, and may include values that are within 15%, within 10%, within 5%, within 1%, etc. of a stated value. Furthermore, the terms "substantially", "similarly", "about" or "approximately" as used herein represent an amount or state close to the stated amount or state that still performs a desired function or achieves a desired result. For example, the term "substantially" "about" or "approximately" may refer to an amount that is within 15%, within 10% of, within 5% of, or within 1% of, a stated amount or value.

[0074] The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

1. A modular furniture assembly comprising:

a transverse member having a length (x') and a width (z);

a wedge shaped base configured such that the wedge shaped base has a length (x) at a back thereof and an angled side length (y);

wherein the wedge shaped base and the transverse member have a defined spatial relationship, the defined spatial relationship being:

the length (x) of the back of the wedge shaped base is substantially equal to the length (x') of the transverse member, and

the length (x) of the back of the wedge shaped base is substantially equal to the sum of the length of the angled side (y) of the wedge shaped base and the width (z) of the transverse member, such that different furniture configurations can be formed.

2. A modular furniture assembly as recited in claim **1**, further comprising a rectangular base having a length (x) and a width (y).

3. A modular furniture assembly as recited in claim **1**, wherein the wedge shaped base is configured such that two of the wedge shaped bases, being of identical design, would form a corner within the modular furniture assembly.

4. A modular furniture assembly as recited in claim **1**, wherein the transverse member has a height that is greater than a height of the wedge shaped base.

5. A modular furniture assembly as recited in claim **1**, wherein the wedge shaped base is generally triangular in shape, generally a truncated triangle in shape, or generally trapezoidal in shape.

6. A modular furniture assembly as recited in claim **1**, wherein the angled side of the base is angled at 45°.

7. A modular furniture assembly as recited in claim **1**, wherein the angled side of the base is angled at about 45°.

8. A modular furniture assembly as recited in claim **6**, wherein the wedge shaped base has two angled sides, where both angled sides of the base are angled at about 45°.

9. A modular furniture assembly as recited in claim **1**, wherein the wedge shaped base comprises a frame assembly and a cushion positionable over the frame assembly, wherein both the frame assembly and the cushion include the wedge shape of the wedge shaped base.

10. A modular furniture assembly as recited in claim **1**, further comprising at least one foot coupler configured to facilitate detachable coupling of the transverse member to the wedge shaped base.

11. A modular furniture assembly as recited in claim **1**, wherein the wedge shaped base is configured such that the wedge shaped base has a length (x) at a back thereof and angled side lengths (y) on each side thereof, and wherein an angle between one of the angled side lengths (y) and the other of the angled side lengths (y) is about 45°, and wherein the wedge shaped base has at least one aperture therein for selectively receiving a coupler for coupling the wedge shaped base to the transverse member.

12. (canceled)

13. A modular furniture assembly as recited in claim **1**, wherein the modular furniture assembly comprises:

an upper coupling mechanism for coupling the transverse member to the wedge shaped base, the upper coupling mechanism selectively coupling a middle portion of the transverse member to a location of the wedge shape base that is at or near a top of the wedge shaped base;

a lower coupling mechanism for coupling the transverse member to the wedge shaped base, the lower coupling mechanism selectively coupling a bottom portion of the transverse member to a location of the wedge shape base that is at or near a bottom of the wedge shaped base.

14. A modular furniture assembly comprising:

first and second transverse members, each having a length (x') and a width (z);

a wedge shaped base configured such that the wedge shaped base has a length (x) at a back thereof and an angled side length (y);

a rectangular base configured such that the rectangular base has a length (x) and a width (y);

wherein the wedge shaped base, the rectangular base, and the transverse members have a defined spatial relationship, the defined spatial relationship being:

the length (x) of the back of the wedge shaped base and the length (x) of the rectangular base are each substantially equal to the length (x') of each of the transverse members, and

the length (x) of the back of the wedge shaped base and the length (x) of the rectangular base are each substantially equal to the sum of (y) and (z), wherein (y) is both the length of the angled side of the wedge shaped base and the width of the rectangular base, and (z) is the width of each of the transverse members, such that (x)=(y)+(z), and (x')=(y)+(z), such that different furniture configurations can be formed;

wherein the first transverse member is selectively coupleable to the back of the wedge shaped base and the rectangular base is selectively coupleable to the angled side of the wedge shaped base, and the second transverse member is selectively coupleable to the rectangular base.

15. A modular furniture assembly as recited in claim **14**, further comprising a third transverse member also having a length (x') and a width (z).

16. A modular furniture assembly as recited in claim **14**, wherein the angled side of the base is angled at 45°.

17. A modular furniture assembly as recited in claim **14**, wherein the angled side of the base is angled at about 45°.

18. (canceled)

19. (canceled)

20. (canceled)

21. A modular furniture assembly as recited in claim **14**, wherein the modular furniture assembly comprises:

an upper coupling mechanism for coupling either of the transverse members to the wedge shaped base, the upper coupling mechanism selectively coupling a middle portion of either transverse member to a location of the wedge shape base that is at or near a top of the wedge shaped base;

a lower coupling mechanism for coupling either of the transverse members to the wedge shaped base, the lower coupling mechanism selectively coupling a bottom portion of either transverse member to a location of the wedge shape base that is at or near a bottom of the wedge shaped base.

22. A modular furniture assembly as recited in claim **14**, wherein each transverse member and the wedge shaped base each comprise a removable cover.

23. A modular furniture assembly as recited in claim **14**, further comprising a second rectangular base having a length (x) and a width (y), the second rectangular base being selectively coupleable to the second angled side of the wedge shaped base.

24. A modular furniture assembly comprising:

a plurality of transverse members, each having a length (x') and a width (z);

first and second wedge shaped bases, each wedge shaped base being configured such that the wedge shaped bases each have a length (x) at a back thereof and an angled side length (y);

a rectangular base configured such that the rectangular base has a length (x) and a width (y);

wherein the wedge shaped bases, the rectangular base, and the transverse members have a defined spatial relationship, the defined spatial relationship being:

the length (x) of the back of each wedge shaped base and the length (x) of the rectangular base are each substantially equal to the length (x') of each of the transverse members, and

the length (x) of the back of each wedge shaped base and the length (x) of the rectangular base are each substantially equal to the sum of (y) and (z), wherein (y) is both the length of the angled side of each wedge shaped base and the width of the rectangular base, and (z) is the width of each of the transverse members, such that (x)=(y)+(z), and (x')=(y)+(z), such that different furniture configurations can be formed;

wherein the first wedge shaped base is selectively coupleable to the second wedge shaped base along corresponding angled sides of the first and second wedge shaped bases so as to form a 90° bend across the first and second wedge shaped bases;

wherein the rectangular base is selectively coupleable to a remaining angled side of the wedge shaped base, and the plurality of transverse members are selectively coupleable to the wedge shaped bases and/or the rectangular base.

25. (canceled)

26. (canceled)

27. (canceled)

28. (canceled)

29. (canceled)

30. (canceled)

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