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(54) **MODULAR BARSTOOL**

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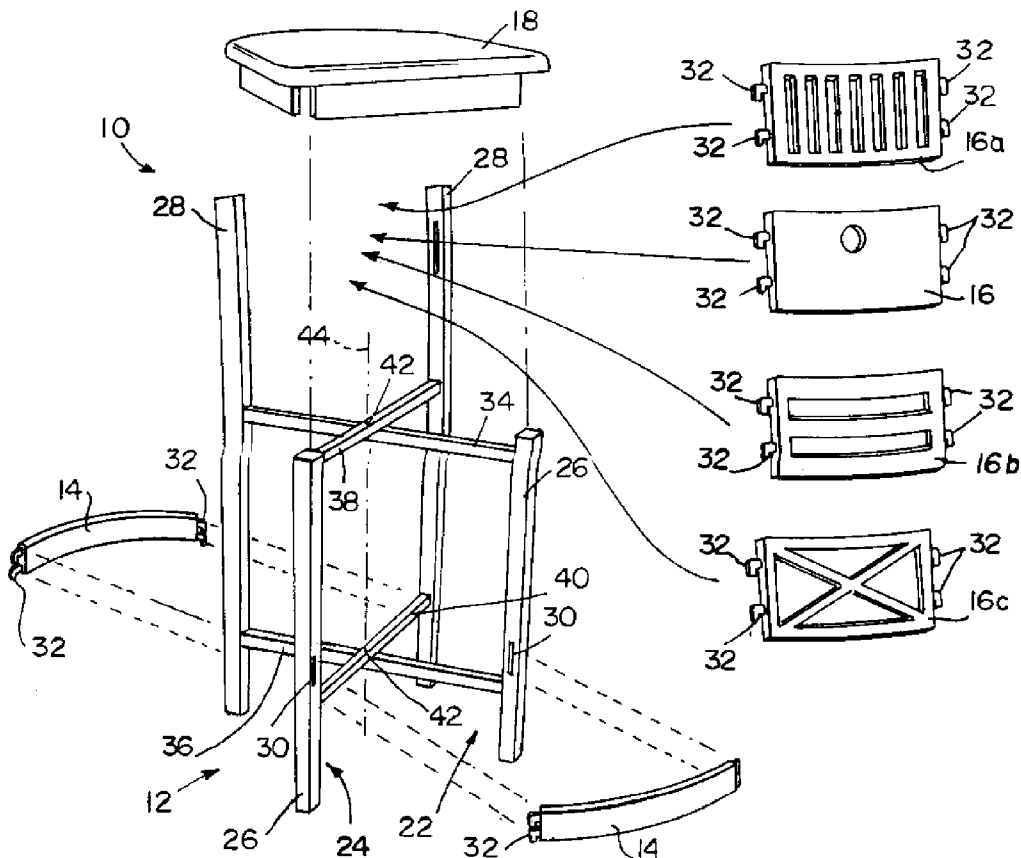
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(52) **U.S. Cl.** **297/440.14**

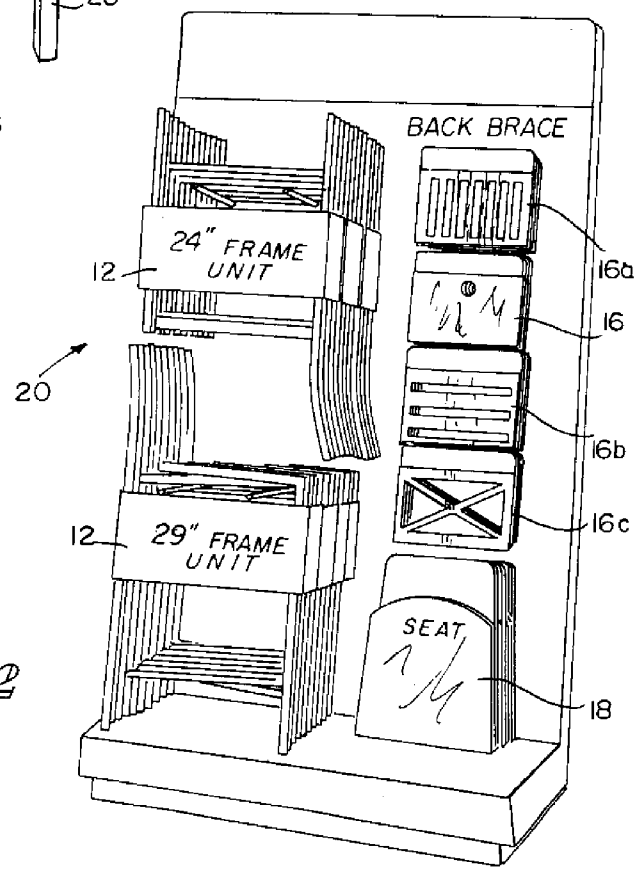
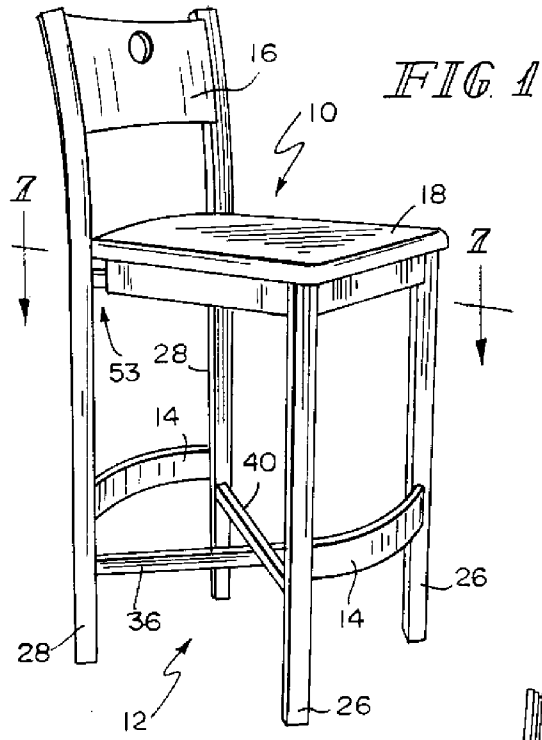
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(57) **ABSTRACT**

(21) Appl. No.: **11/941,773**

A furniture unit includes several components configured to be coupled together to form a modular barstool.





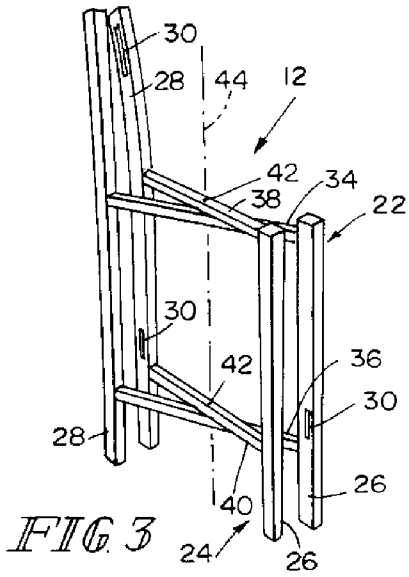


FIG 3

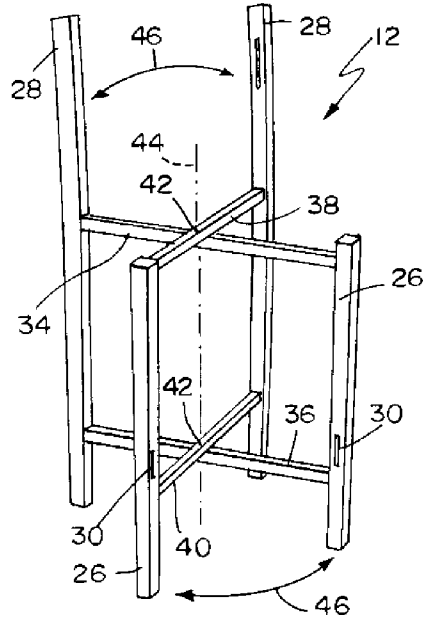


FIG 4

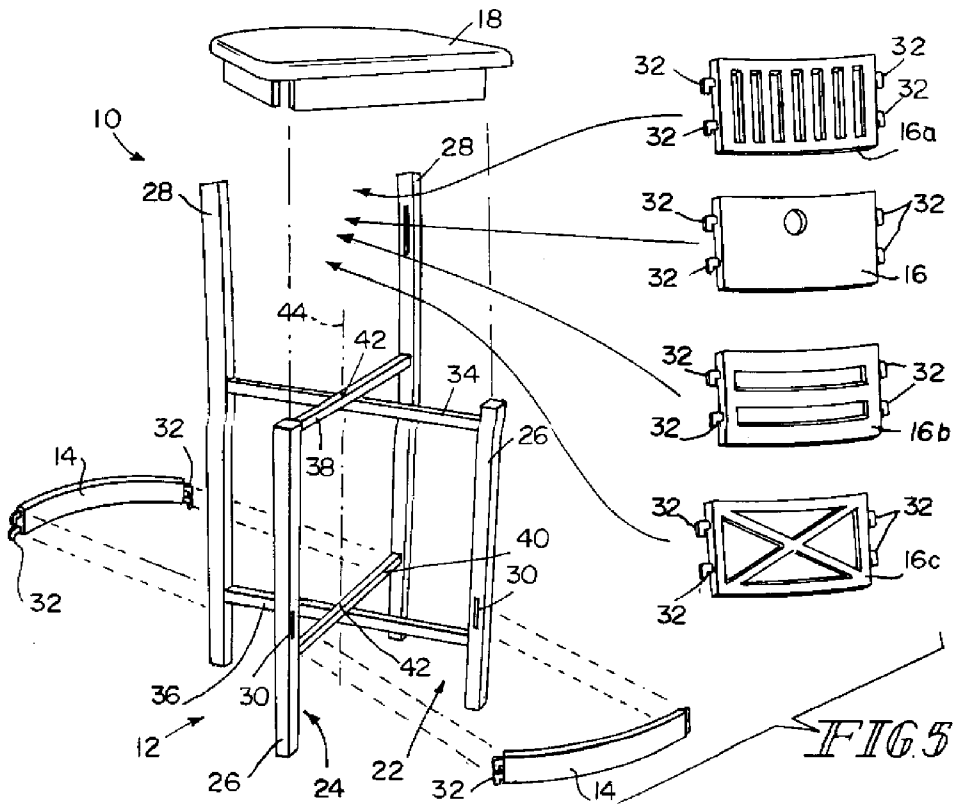


FIG 5

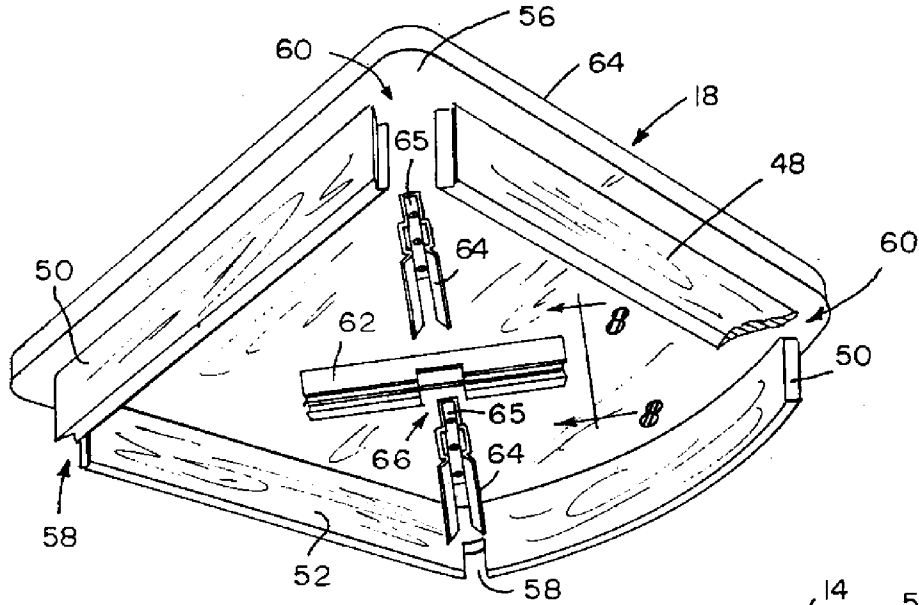


FIG. 6

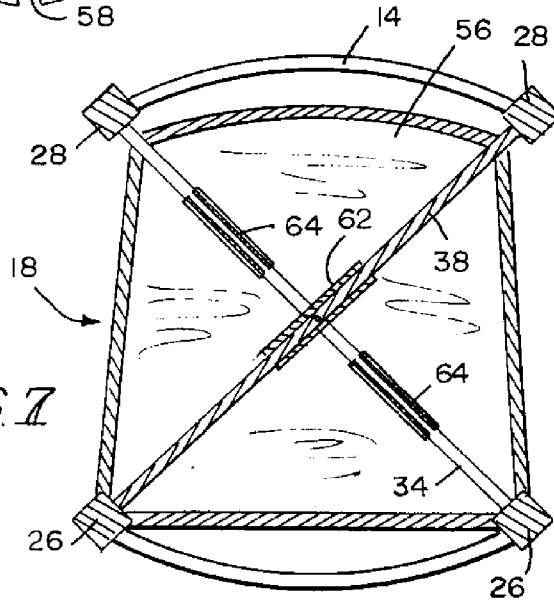


FIG. 7

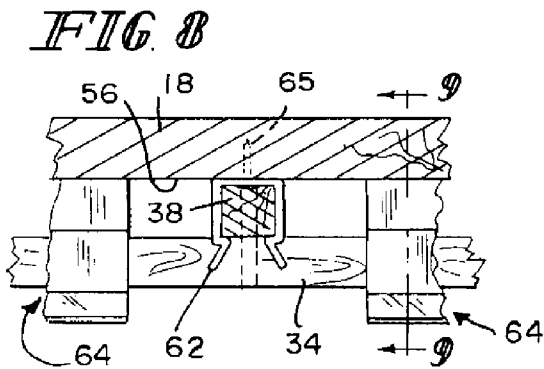


FIG. 8

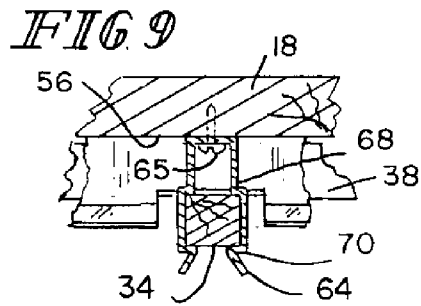


FIG. 9

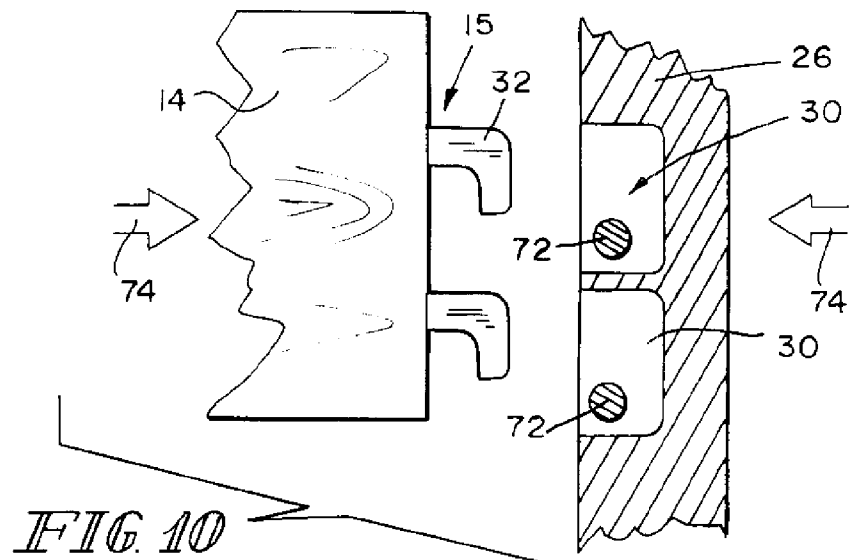


FIG. 10

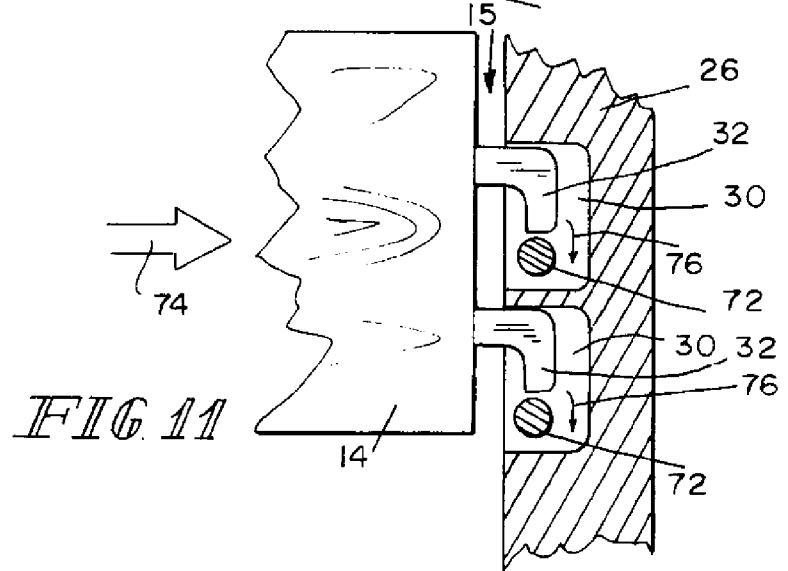


FIG. 11

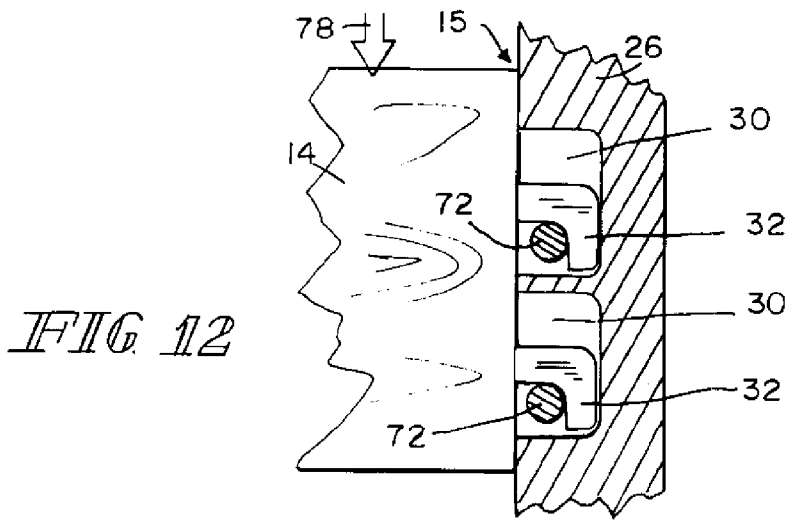


FIG. 12

MODULAR BARSTOOL

[0001] This application claims priority under 35 U.S.C. §119(e) to U.S. Provisional Application Ser. No. 60/869,880, filed Dec. 13, 2006, which is expressly incorporated by reference herein.

BACKGROUND

[0002] The present disclosure relates to furniture units, and particularly barstools. More particularly, the present disclosure relates to folding or collapsible modular barstools.

SUMMARY

[0003] According to the present disclosure, a furniture unit, or modular barstool, includes several components. The components are adapted to cooperate to provide a furniture kit or, for example, a modular barstool kit. The kit includes a frame unit, a rigid back brace, and a rigid seat. Each frame unit includes a front leg and a rear leg.

[0004] In an illustrative embodiment, the rigid back brace and the rigid seat are configured to be coupled to the frame unit only when the furniture unit is in a use position to form the modular barstool. In another illustrative embodiment, the kit further includes at least one leg brace configured to be releasably coupled to the frame unit only when the frame unit is in the use position.

[0005] In an illustrative embodiment, the releasable coupling of the rigid back brace, the rigid seat, and the rigid leg brace are accomplished without the use of tools. In another illustrative embodiment, the several components of the kit are adapted to be displayed on a rack so that a customer may select from a variety of frame unit dimensions and back brace designs.

[0006] Additional features of the disclosure will become apparent to those skilled in the art upon consideration of the following detailed description of illustrative embodiments exemplifying the best mode of carrying out the disclosure as presently perceived.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The detailed description particularly refers to the accompanying figures in which:

[0008] FIG. 1 is a perspective view of a furniture unit, for example, a modular barstool, showing components of a modular barstool kit in an assembled, use configuration, according to the present disclosure, the components including a frame unit having two frames, each frame including a front leg, a rear leg, an upper cross-member (see FIGS. 3-5), and a lower cross-member, and the components further including, for example, a pair of rigid leg braces, a rigid back brace, and a rigid seat;

[0009] FIG. 2 is a front view of a rack display showing components of the modular barstool of FIG. 1 available for selection by a consumer, the components shown including a choice of rigid seats, a choice of frame size which includes, for example, the frame unit and rigid leg braces, and a choice of rigid back brace design;

[0010] FIG. 3 is a perspective view of a frame unit of the modular barstool shown in FIG. 1, the frame unit having first and second frames, each frame including a front leg and a rear leg, and showing the frame unit having been folded into a

collapsed position about a vertical axis of rotation formed by pins connecting the first and second frames;

[0011] FIG. 4 is a perspective view of the frame unit of FIG. 3 showing the frame unit in an unfolded, use position having been rotated about the axis of rotation formed by the pins, as suggested by the movement arrows;

[0012] FIG. 5 is an exploded view of the modular barstool of FIG. 1 showing components of the modular barstool kit, the components including a frame unit having first and second frames which have upper cross-members and lower cross-members coupled together by pins that form a vertical axis of rotation for moving the frame unit between a collapsed position and a use position, the components further including rigid leg braces configured to interconnect front and rear legs of the frame unit, a rigid seat configured to be coupled to the frame unit and to overlie the cross-members, and a sample selection of rigid back braces configured to be coupled to the rear legs of the frame unit;

[0013] FIG. 6 is a perspective view of an underside of the rigid seat of FIG. 5, showing the seat including front, rear, and side skirts fastened to the seat and configured to fit within respective spaces located between the legs of the frame unit, and further showing an elongated clamp and two spaced-apart clamps fastened to the underside of the rigid seat, each of the clamps being configured to be coupled to a cross-member of the frame unit;

[0014] FIG. 7 is a cross-sectional view taken through line 7-7 of FIG. 1 and showing the elongated clamp and the spaced-apart clamps of FIG. 6 coupled to, respectively, a top upper cross-member (shown in cross-section) and a bottom upper cross-member of the frame unit;

[0015] FIG. 8 is a cross-sectional view taken through line 8-8 of FIG. 6 and showing the elongated clamp coupled to the top upper cross-member of the frame unit and the two spaced-apart clamps coupled to the bottom upper cross-member of the frame unit;

[0016] FIG. 9 is a cross-sectional view taken through line 9-9 of FIG. 8 and showing one of the spaced-apart clamps coupled to the bottom upper cross-member of the frame unit, the spaced-apart clamp including an upper and a lower shoulder configured to provide a stable coupling of the spaced-apart clamp to the cross-member;

[0017] FIG. 10 is a partial cross-sectional view of one of the legs shown, for example, in FIG. 5 and a cut-away view of, for example, one of the rigid leg braces or rigid seat backs shown in FIG. 5, and showing that the rigid leg brace includes a pair of hooks configured to mate with a pair of pins located in recesses of the leg, as suggested by the movement arrows;

[0018] FIG. 11 is a partial cross-sectional and cut-away view, similar to FIG. 10, showing the hooks being inserted into the recesses and overlying the pins in preparation for being forced downward and over the pins, as suggested by the downward facing arrows; and

[0019] FIG. 12 is a partial cross-sectional and cut-away view, similar to FIG. 10, showing the hooks having been pushed downward over the pins and fully into the recesses to couple the rigid leg brace to the leg, as suggested by the downward facing arrow.

DETAILED DESCRIPTION

[0020] A modular barstool 10, shown, for example, in FIG. 1, includes various components which have been combined to produce the modular barstool 10. Those components include a frame unit 12 and may include one or more rigid leg braces

14, shown herein as a pair of rigid leg braces 14. The components also include a rigid back brace 16 and a rigid seat 18.

[0021] Modular barstool 10 is configured to be sold as a kit with the various components displayed for consumer selection on, for example, a rack display 20, as shown in FIG. 2. As suggested in FIG. 2, frame unit 12, is available in, for example, two sizes, a 24" or 29" frame to accommodate a particular seat width and includes a variety of rigid back brace designs 16, 16a, 16b, and 16c. For purposes of display, frame unit 12 may include rigid leg braces 14 as part of its packaging.

[0022] As shown in FIG. 3, frame unit 12 is in a collapsed position or configuration and includes a first frame 22 and a second frame 24. Each frame 22, 24 includes a front leg 26 and a rear leg 28. Each leg 26, 28 includes slots or recesses 30 configured to receive connectors such as, for example, hooks 32 as shown, for example, in FIG. 5 on leg braces 14 and back braces 16. First frame 22 includes an upper cross-member 34 and a lower cross-member 36 and second frame 24 includes an upper cross-member 38 and a lower cross-member 40. Upper cross-members 34 and 38 are connected together by a connector, for example, a pin 42. Likewise, lower cross-members 36 and 40 are connected together by, for example, a pin 42. Pins 42 form a vertical axis of rotation 44 about which frames 22, 24 can rotate between the collapsed position, as shown in FIG. 3 and a use position, as shown in FIG. 4 and as suggested by movement arrows 46.

[0023] As shown in the exploded view of FIG. 5, frame unit 12 is in the use position and the leg braces 14, seat 18 and one of the variety of back braces 16 are configured to be releasably coupled to frame 12 to form modular barstool 12 only when the frame unit 12 is in the use position. As suggested in FIG. 5, seat 18, when coupled to frame unit 12, is configured to be coupled to and overlie upper cross-members 34, 38, as further suggested in FIGS. 6-9.

[0024] Seat 18, as shown in FIG. 6, includes a front skirt 48, side skirts 50, a rear skirt 52, a top side 54, and an underside 56. Side skirts 50 and rear skirt 52 are interconnected, or may be formed monolithically or integrally, and form a notch 58 at their intersections, as shown in FIG. 6. Notch 58 is configured to provide a spacing 53 (see FIG. 1) such that the side skirts 50 and the rear skirt 52 do not engage the rear legs 28 when seat 18 is coupled to frame unit 12 in the use position. Side skirts 50 and front skirt 48 are configured such that a spacing 60 exists between the front skirt 48 and each of the side skirts 50 such that, when seat 18 is coupled to frame unit 18, the side skirts 50 and front skirt 48 may engage the front legs 26 of the frame unit 12 as suggested in FIG. 1. As further suggested in FIGS. 1 and 5, when seat 18 is releasably coupled to the frame unit 12, a portion of seat 18 overlies front legs 26 but seat 18 does not overlie rear legs 28.

[0025] Seat 18 further includes a connector 62, shown as an elongated clamp 62, which may be a spring clamp, and two connectors 64, shown as spaced-apart clamps 64 fastened to the underside 56 of seat 18 by fasteners 65, such as, for example, screws, as suggested in FIG. 6 and shown in FIGS. 8 and 9. Clamps 62, 64 are configured to be releasably coupled to upper cross-members 34, 38 of frame unit 12, only when the frame unit 12 is in the use position as suggested in FIG. 7. Elongated clamp 62, as shown in FIG. 7, is coupled to upper cross-member 38 (shown in cross-hatch) and spaced-apart clamps 64 are coupled to upper cross-member 34. Upper cross-member 38 lies in a plane above that of upper cross-member 34, with upper cross-member 38 being a top

upper cross-member and upper cross-member 34 being a bottom upper cross-member. Thus, elongated clamp 62 includes a notch or recess 66 to allow elongated clamp 62 to be coupled to upper cross-member 38 and permit spaced-apart clamps 64 to be coupled to the bottom, or lower-lying upper cross-member 34. It is within the scope of the present disclosure that any combination of elongated clamps 62 and spaced-apart clamps 64 are conceivable, as are the type and functioning of clamping mechanisms included in clamps 62, 64.

[0026] Views of the coupling of elongated clamp 62 to upper cross-member 38 and spaced-apart clamp 64 to upper cross-member 34 are shown in FIGS. 8 and 9, respectively. As suggested in FIG. 9 and also in FIG. 6, spaced-apart clamp 64 includes an upper shoulder 68 and a lower shoulder 70, both shoulders 68, 70 being configured such that spaced-apart clamp 64 provides a stable coupling to upper cross-member 38.

[0027] The leg braces 14 are coupled to the front and rear legs 26, 28 in essentially the same manner that the back brace 16 is coupled to the rear legs 28. That is, both the leg braces 14 and back brace 16 include hooks 32 appended to an outer portion 15, as shown in FIGS. 10-12, as well as FIG. 5. Also, front and rear legs 26, 28 include recesses 30 and pins 72 configured to receive the hooks 32 to couple the leg braces 14 and the back brace 16 to their respective front and rear legs 26, 28.

[0028] Using leg brace 14 and front leg 26 as an example, FIGS. 10-12 illustrate their coupling together. As shown in FIG. 10, leg brace 14 includes hooks 32 and front leg 26 includes recesses 30 and a pin 72 located within each recess. Leg 14 and front leg 26 are brought together such that hooks 32 initially overlie pins 72 (see FIG. 11) and then leg brace 14 is moved inwardly and downwardly such that hooks 32 ride over and clamp down on pins 72 to couple the leg brace 14 securely to the front leg 26, as suggested by the movement arrows 74, 76, and 78.

[0029] The modular barstool kit disclosed herein includes components that can be used "in the field" to set-up the modular barstool 10 in a series of steps that do not require tools (such as, for example, screwdrivers, or wrenches etc.). The "set-up" steps include spreading the frames 22, 24 of the frame unit 12 apart to a use position by pivoting the frames 22, 24 about pivot axis 44 formed by pins 42. Back brace 16 may then be coupled to rear legs 28 and secured in place by hooks 32, recesses 30 and pins 72. Leg braces 14 may then be coupled to the front and rear legs 26, 28 in the same manner as the coupling of the back brace 16. The seat 18 can then be coupled to the upper cross-members 34, 38 of the frame unit 12 using elongated clamp 62 and spaced-apart clamps 64 to secure the entire modular barstool 10 in the open or use position. It is within the scope of this present disclosure that after spreading the frames 22, 24 apart to the use position, the remaining components of the kit may be assembled in any order. To disassemble or knock-down the assembled modular barstool 10, the components may be taken apart in reverse order of assembly or in a different order.

[0030] It is within the scope of the present disclosure that hooks 32, recesses 30 and pins 72 may be replaced by tabs and slots to provide an interference or similar fitting between the leg braces 14 and the legs 26, 28 as well as between the back brace 16 and the rear legs 28.

[0031] It is within the scope of the present disclosure that pins 42 may be removable to provide a knock-down of the frames 22, 24 of the modular barstool kit.

[0032] It is within the scope of the present disclosure that seat 18 may include a cushion coupled to the top side 54 of the seat 18.

[0033] It is within the scope of the present disclosure that leg braces 14 may include a variety of designs similar to or different from the variety of designs shown for the back brace 16.

[0034] It is within the scope of the present disclosure that the coupling of the legs braces 14 and back brace 16 to the front and rear legs 26, 28, and the coupling of the seat 18 to the frame unit 12 may require the use of tools.

1. A furniture unit comprising
a frame unit including a pair of frames pivotably coupled to one another for movement about a vertical axis of rotation between a collapsed position of the frame unit and a use position of the frame unit, each frame including a front leg and a rear leg,
a rigid back brace releasably coupled to the rear legs only when the frame unit is in the use position, and
a rigid seat releasably coupled to the frame unit only when the frame unit is in the use position.

2. The furniture unit of claim 1, further comprising a rigid leg brace releasably coupled to the front legs only when the frame unit is in the use position.

3. The furniture unit of claim 1, wherein the rigid back brace is releasably coupled to the rear legs without the use of tools.

4. The furniture unit of claim 1, wherein the rigid seat is releasably coupled to the frame unit without the use of tools.

5. The furniture unit of claim 2, wherein the rigid leg brace is releasably coupled to the front legs without the use of tools.

6. The furniture unit of claim 1, wherein each frame further includes an upper cross-member interconnecting the front and rear legs and a lower cross-member interconnecting the front and rear legs, the upper cross-members are pivotably coupled to each other, the lower cross-members are pivotably coupled to each other, and the upper and lower cross-members are configured to rotate about the vertical axis of rotation to place the frame unit in the collapsed position and the use position.

7. The furniture unit of claim 1, wherein each leg includes a recess and a pin located in the recess and the rigid back brace includes a connector configured to be received in the recess and to be releasably coupled to the pin when the rigid back brace is mounted on the rear legs in the use position of the frame unit.

8. The furniture unit of claim 1, wherein each leg includes a recess and a pin located in the recess and the leg brace includes a connector configured to be received in the recess and to be releasably coupled to the pin when the leg brace is mounted on the front legs in the use position of the frame unit.

9. The furniture unit of claim 1, wherein the rigid seat includes a pair of side skirts and a rear skirt, each of the skirts extends downwardly from an underside of the rigid seat, the rear skirt is interconnected with each of the side skirts to form a pair of notches at each interconnection, and each notch provides a spacing such that when the rigid seat is releasably coupled to the frame unit in the use position, the side skirts and the rear skirt do not engage the rear legs of the frame unit.

10. The furniture unit of claim 1, wherein the rigid seat includes a pair of side skirts and a front skirt, each of the skirts

extends downwardly from an underside of the seat and is configured such that a spacing exists between the front skirt and each of the side skirts such that when the rigid seat is releasably coupled to the frame unit, the side skirts and the front skirt engage the front legs of the frame unit.

11. The furniture unit of claim 1, wherein when the rigid seat is releasably coupled to the frame unit and a portion of the rigid seat overlies the front legs but does not overlie the rear legs.

12. The furniture unit of claim 6, wherein the rigid seat includes an underside and a first connector fastened to the underside and the connector is configured to be releasably coupled to a first of the upper cross-members when the rigid seat is mounted on the frame unit in the use position.

13. The furniture unit of claim 12, wherein the rigid seat includes a second connector fastened to the underside of the rigid seat and the second connector is configured to be releasably coupled to a second of the upper cross-members when the rigid seat is mounted on the frame unit in the use position.

14. The furniture unit of claim 13, wherein the first upper cross-member lies in a plane above that of the second upper cross-member and the first connector includes a recess allowing the first connector to be releasably coupled to the first upper cross-member and the second connector to be releasably coupled to the second upper cross-member.

15. The furniture unit of claim 13, wherein the first connector includes an elongated clamp having a recess, the second connector includes a pair of spaced-apart clamps each having an upper shoulder and a lower shoulder, the recess allowing the elongated clamp to be releasably coupled to the first upper cross-member, and the shoulders provide a stable coupling of the pair of spaced-apart clamps to the second upper cross-member.

16. A furniture kit including a plurality of components capable of being assembled in the field without tools to produce a furniture unit, the furniture kit comprising

a frame unit including a pair of frames adapted to be pivotably coupled to one another for movement between a collapsed position of the frame unit and a use position of the frame unit, each frame including a front leg and a rear leg,

a rigid back brace adapted to be releasably coupled to the rear legs only when the frame unit is in the use position, and

a rigid seat adapted to be releasably coupled to the frame unit only when the frame unit is in the use position.

17. The furniture kit of claim 16, further comprising a rigid leg brace adapted to be releasably coupled to one of the front legs and the rear legs only when the frame unit is in the use position.

18. The furniture kit of claim 16, further comprising a rigid leg brace adapted to be releasably coupled to the rear legs only when the frame unit is in the use position and a rigid leg brace adapted to be releasably coupled to the front legs only when the frame unit is in the use position.

19. The furniture kit of claim 16, wherein the releasable couplings of the rigid back brace and the rigid seat are accomplished without the use of tools.

20. The furniture kit of claim 17, wherein the releasable coupling of the rigid leg brace is accomplished without the use of tools.

21. A furniture rack display including a plurality of different components arranged on the display for selection as part of a furniture kit, the components of the kit being capable of

being assembled in the field without tools to produce a furniture unit, the furniture display comprising

a plurality of frame units of different sizes for selection by a customer to accommodate a desired seat width, each frame unit including a pair of frames adapted to be pivotably coupled to each other for movement about a vertical axis of rotation between a collapsed position of the furniture unit and a use position of the furniture unit, each frame including a front leg and a rear leg, and the frame unit further including a rigid leg brace adapted to be releasably coupled to the front legs only when the frame unit is in the use position,

a plurality of different rigid back braces for selection by a customer to accommodate a desired design, each of the rigid back braces adapted to be releasably coupled to the rear legs of the selected frame unit only when the selected frame unit is in the use position, and

a rigid seat adapted to be releasably coupled to the selected frame unit only when the selected frame unit is in the use position.

22. A method of assembling components of a furniture kit, the components including a first frame having a front leg and a rear leg, a second frame having a front leg and a rear leg, the second frame being pivotably coupled to the first frame for movement between a collapsed position of the frame unit and a use position of the frame unit, a rigid back brace, a rigid leg brace, and a rigid seat, the method steps comprising

spreading the frames apart to the use position, then releasably coupling the rigid back brace to the rear legs, releasably coupling the rigid leg brace to one of the front legs and the rear legs, and releasably coupling the seat to the frame unit.

23. The method of claim **22**, wherein each of the releasably coupling steps occurs without the use of tools.

24. The method of claim **22**, wherein the rigid seat includes a connector mounted on an underside of the rigid seat, each frame includes an upper cross-member interconnecting the front and rear legs, and the connector is configured to be releasably coupled to one of the upper cross-members without the use of tools when the rigid seat is releasably coupled to the frame unit in the use position.

25. The method of claim **22**, wherein the rigid seat includes a pair of side skirts, a rear skirt extending downwardly from an underside of the rigid seat and interconnected with each of the side skirts to form a pair of notches at each intersection of the side and rear skirts, and a front skirt extending downwardly from the underside of the rigid seat and configured such that a spacing exists between the front skirt and each of the side skirts, and when the rigid seat is releasably coupled to the frame unit in the use position, the side skirts and the rear skirt do not engage the rear legs and the side skirts and the front skirt do engage the front legs.

* * * * *