



US 20040075328A1

(19) **United States**

(12) **Patent Application Publication**  
**Petty**

(10) **Pub. No.: US 2004/0075328 A1**

(43) **Pub. Date: Apr. 22, 2004**

(54) **VERSATILE CHAIR SYSTEM**

**Publication Classification**

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(51) **Int. Cl.<sup>7</sup> ..... A47C 7/00**

(52) **U.S. Cl. .... 297/451.1**

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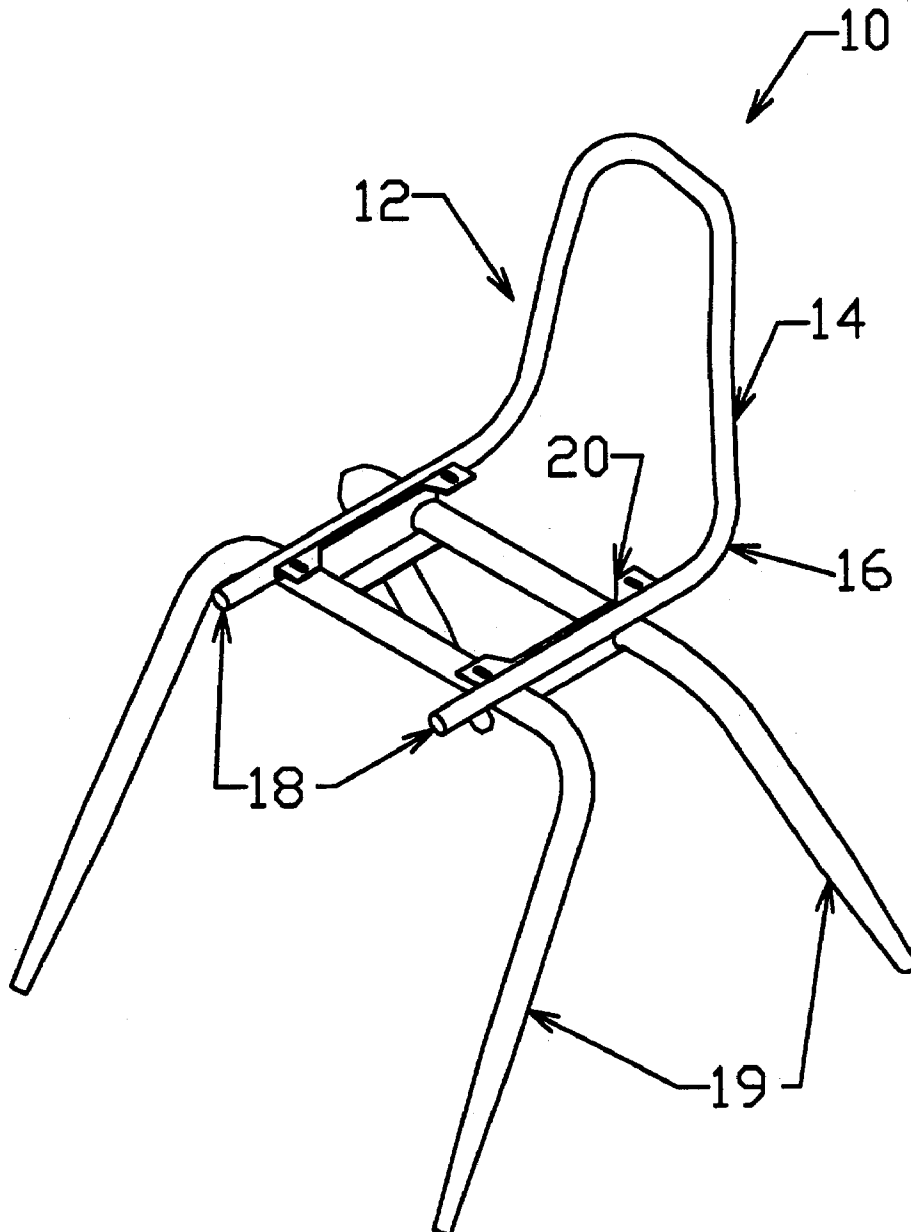
(57) **ABSTRACT**

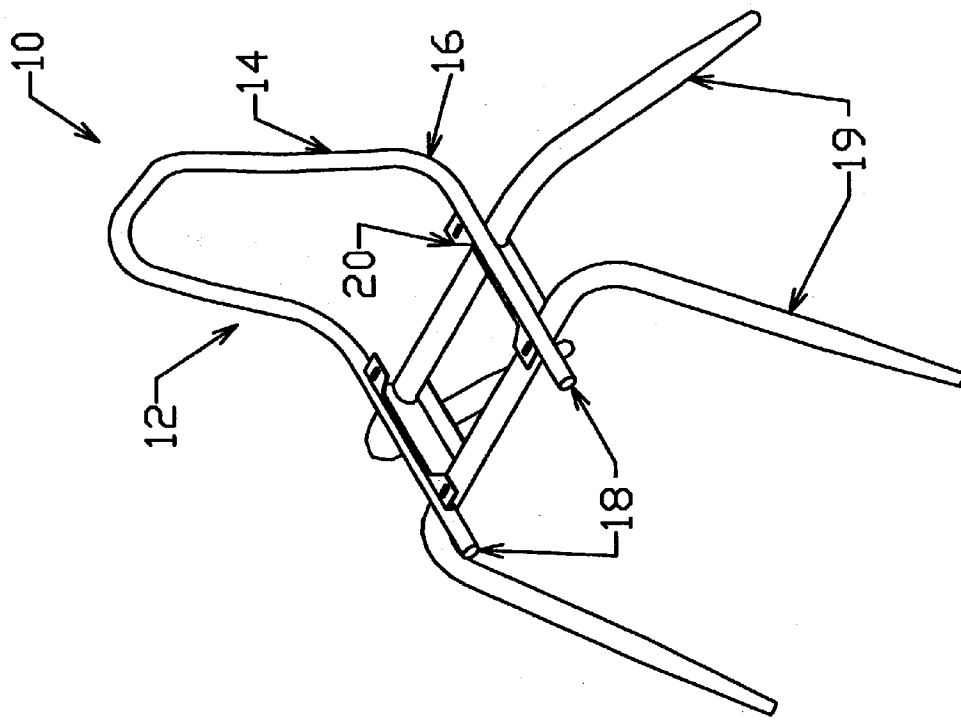
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The invention is of a modular chair assembly system which includes a single chair frame design and, to be used in the alternative, a plurality of sled back chair support members and a plurality of clerical style seat support members and clerical style back support members. Chairs of either sled back or clerical style can be assembled with the use of the single frame style.

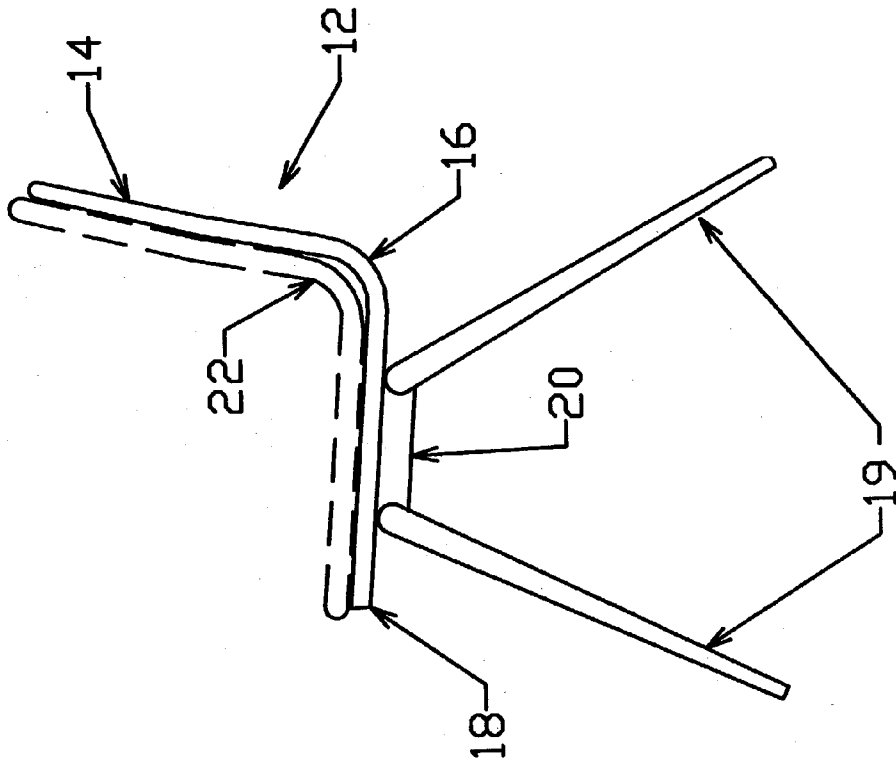
(21) **Appl. No.: 10/273,377**

(22) **Filed: Oct. 16, 2002**

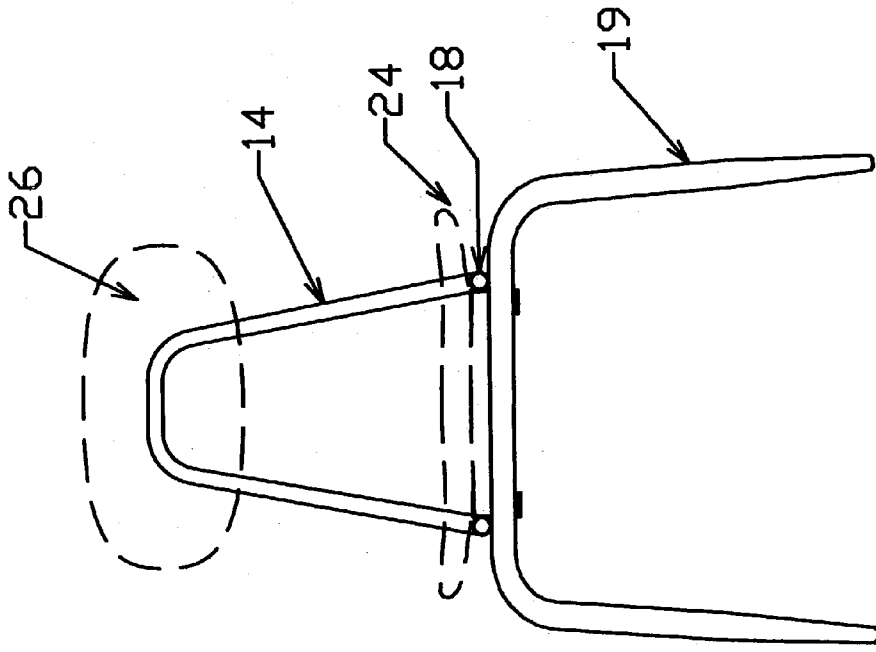




**FIG. 1**



**FIG. 2**



**FIG. 3**

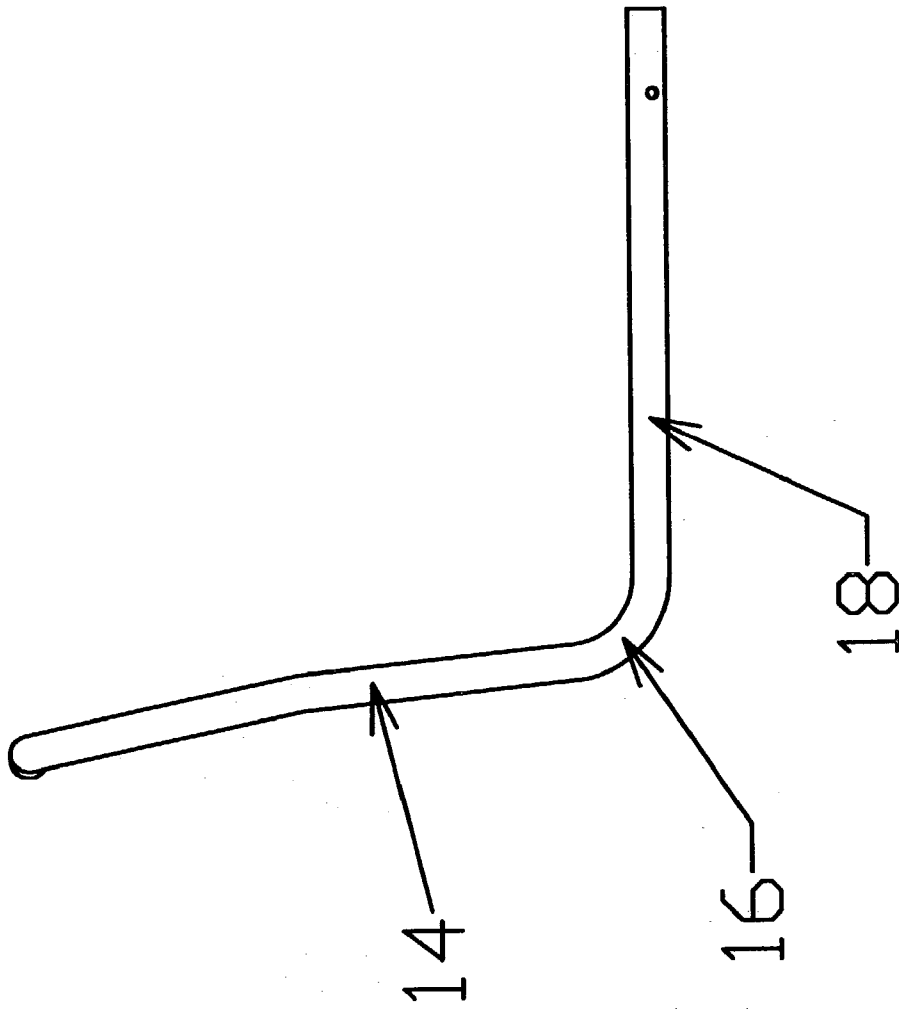
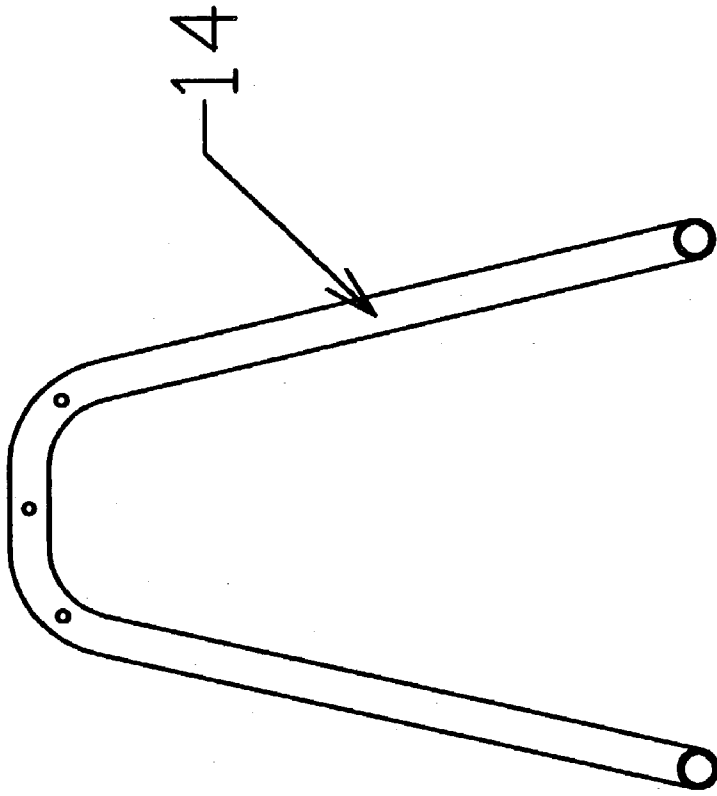
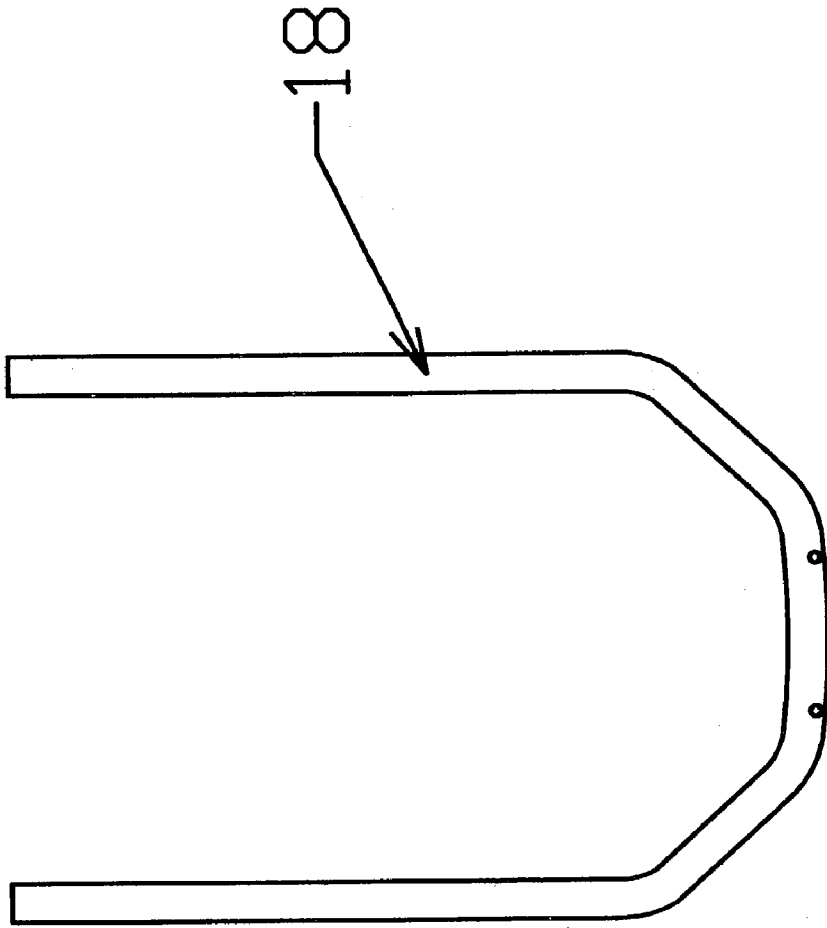


FIG. 4



**FIG. 5**



**FIG. 6**

## VERSATILE CHAIR SYSTEM

### BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to chairs principally useful in commercial, educational and industrial contexts.

[0003] 2. Background Information

[0004] Certain customers for chairs desire different seating surfaces, contours, etc. For example, a “sled back” chair is one which includes a single piece seating surface which more or less cradles the person sitting therein. Such a chair is most suited for long, substantially passive activity, such as in an audience or lecture context.

[0005] On the other hand, seating geared more for an activity, albeit while seated (such as typing, or computer entry), will not so much cradle an individual as support them in a posture more suitable for the activity. Sled back seats are not usually suitable for this need, and seats with separate seat and back support members are more appropriate (we will call them “clerical style chairs” hereafter).

[0006] As with any industry, manufacturing expense is a primary concern, and a major contributor to manufacturing expense is the addition of different product designs with differing manufacturing steps or requirements. In the case of chairs as described above, for example, making any cumulative number of chair frames in two different frame styles—one for a sled back chair and one for a clerical style chair—will be considerably more expensive than making the same number of chair frames in a single style.

[0007] In view of the above, it would well serve companies in the chair manufacturing realm to provide a flexible chair configuration or assembly system which, relying on a single chair frame design, allows the production of at least two distinct end product chairs.

### SUMMARY OF THE INVENTION

[0008] It is an object of the present invention to provide an improved design for a chair frame.

[0009] It is another object of the present invention to provide an improved design for a chair frame, which chair frame is useful as a constituent in constructing at least two distinctive chair products.

[0010] It is another object of the present invention to provide an improved design for a chair frame, which chair frame is useful as a constituent in constructing both sled back and clerical style chairs.

[0011] It is another object of the present invention to provide an modular chair system for selectively constructing both sled back and clerical style chairs, using identical chair frames.

[0012] In satisfaction of these and related objects, the present invention provides an improved chair frame design and modular chair frame construction system which permits the construction, using a single chair frame design, of at least two distinct end product chairs—a sled back chair and a clerical style chair. The modular system includes chair frames of a single design, and seating components for each of the two chair designs.

[0013] Because of the respective configuration of the components specified herein, one may easily choose between constructing a sled back chair or a clerical style chair, with no impact on the chair frame aspects of manufacturing, inventory, etc. This, in turn, favorably impacts a producer’s manufacturing expense, product fulfillment timeliness, and inventory pressures, the latter two benefits flowing from the fact that chair frames of a single design will fulfill orders for multiple chair type orders, and inventory need only be maintained in anticipation of the cumulative orders for each multiple chair styles, rather than individual collections for multiple chair styles.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a perspective view of the preferred embodiment of the chair frame of the present invention.

[0015] FIG. 2 is a side elevational view of the chair frame of the preferred embodiment, with a sled back chair shell shown in dotted line format.

[0016] FIG. 3 is a front elevational view of a chair of the present invention, with seat and back support members of a clerical style chair shown in dotted line format.

[0017] FIG. 4 is a side elevational view of the primary support frame of the preferred embodiment.

[0018] FIG. 5 is rear view of the back support portion of the primary support frame of the preferred embodiment.

[0019] FIG. 6 is a top plan view of the seat support portion of the primary support frame of the preferred embodiment.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0020] Referring to FIG. 1, the chair frame of the present invention is identified generally by the reference number 10. Frame 10 includes a primary support frame 12 which includes a back support portion 14 on one side of a primary support frame bend 16, and a seat support portion 18 on the other side of bend 16.

[0021] Leg members 19 extend from linkage rails 20, to which primary support frame 12 is also attached as shown in the figures (FIGS. 1 and 2).

[0022] Particularly with reference to FIGS. 2 and 3, it is illustrated that the orientation and configuration of primary support frame 12 is such that a sled back-shell 22, or a two-part assembly of seat support member 24 and back support member 26 will work equally well in producing either the sled back or clerical style chair.

[0023] Example holes for attaching with screws either of the chair style components (sled back shell 22, or a seat support member 24 and back support member 26 combination) are illustrated in FIGS. 5 and 6. Of course, other attachment schemes are possible, including having molded cusps for a snap-on engagement between frame 10 and either sled back shell 22, or the components of the seat support member 24 and back support member 26 combination, and other seating surface attachment methods and components as are known in the art.

[0024] The chair frame of the present invention is expected to be assembled from steel, with suitable plating or paint, and the sled back shell 22, seat support member 24,



and back support member 26 are all made of plastic material as is customary in the seating industry for these chair styles. Of course, alternative materials may be used, including, by way of example only, metal seating support members instead of plastic, and synthetic chair frame components.

[0025] Although the invention has been described with reference to specific embodiments, this description is not meant to be construed in a limited sense. Various modifications of the disclosed embodiments, as well as alternative embodiments of the inventions will become apparent to persons skilled in the art upon the reference to the description of the invention. It is, therefore, contemplated that the appended claims will cover such modifications that fall within the scope of the invention.

I claim:

1. A modular chair assembly system comprising:
  - a chair frame having a primary support frame with a back support portion and a seat support portion;
  - a sled back seat support member configured for attachment to said chair frame;
  - a clerical style seat support member configured for attachment to said seat support portion of said primary support frame; and
  - a clerical style back support member configured for attachment to said back support portion of said primary support frame.

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