United States Patent [19]

Straits

[11] **3,758,155**

[45] **Sept. 11, 1973**

[54] **GANG CHAIR CONSTRUCTION**

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[22] Filed: **Mar. 16, 1972**

[21] Appl. No.: **235,447**

Related U.S. Application Data

[63] Continuation of Ser. No. 87,799, Nov. 9, 1970.

[52] **U.S. Cl.** **297/248,** 297/239

[51] **Int. Cl.** **A47c 1/124**

[58] **Field of Search** 297/248; 108/64

[56] **References Cited**

UNITED STATES PATENTS

3,018,131	1/1962	Krueger	297/248
1,520,518	12/1924	Thomason	108/64
3,328,075	6/1967	Albinson	297/248 X
3,637,256	1/1972	Harty	297/248
3,314,718	4/1967	Crandall	297/248
3,203,731	8/1965	Krueger	297/248 X

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[57] **ABSTRACT**

A connector means for temporary or permanent ganging of chairs arranged in side-by-side relationship. The connector means having a removable hook member intermediate adjacent identical connector members on adjacent chairs which hook members provides a hook type engagement between the connector members. The hook and the two connector members can be fastened together as an assembly to provide a permanent connection.

1 Claim, 6 Drawing Figures

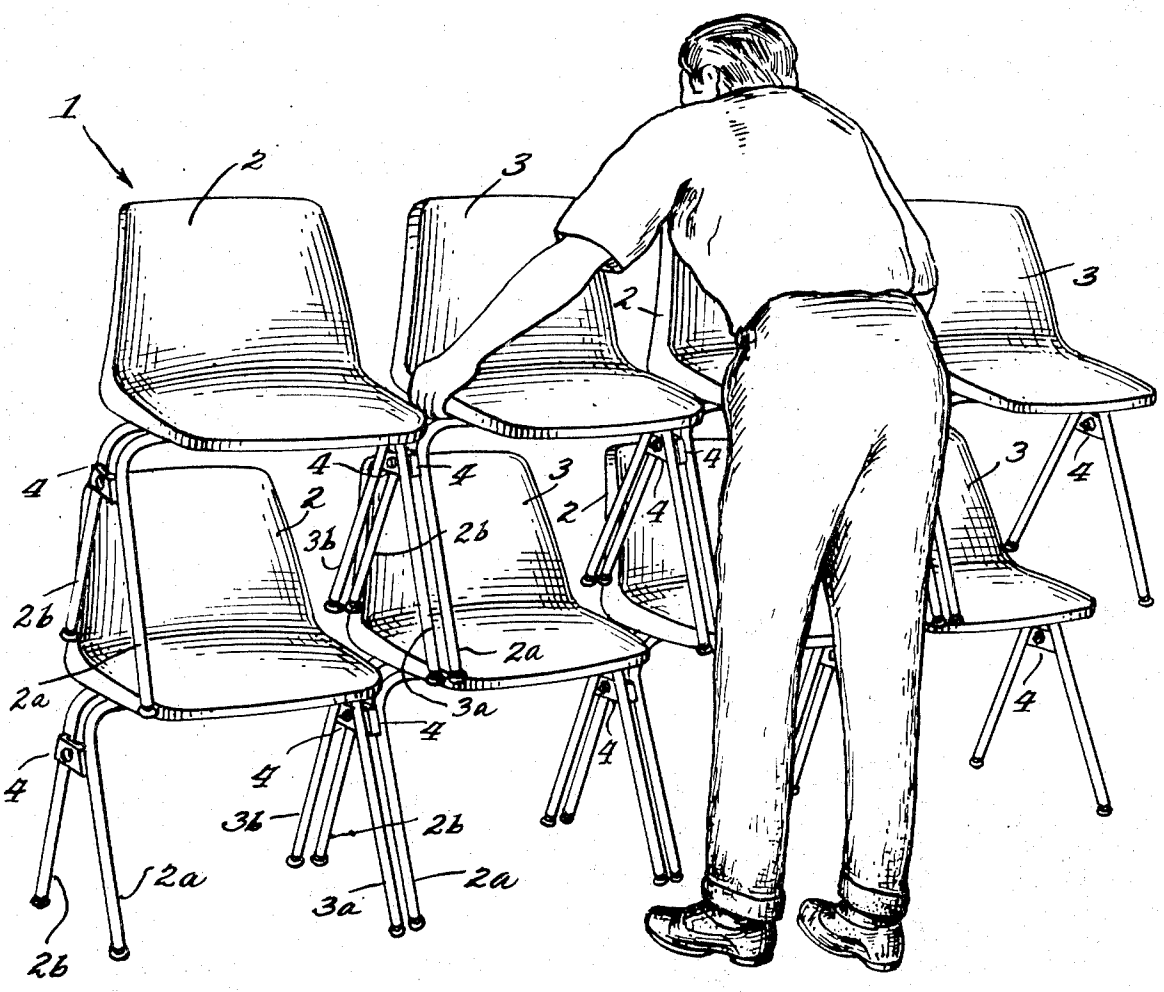

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Fig. 1.

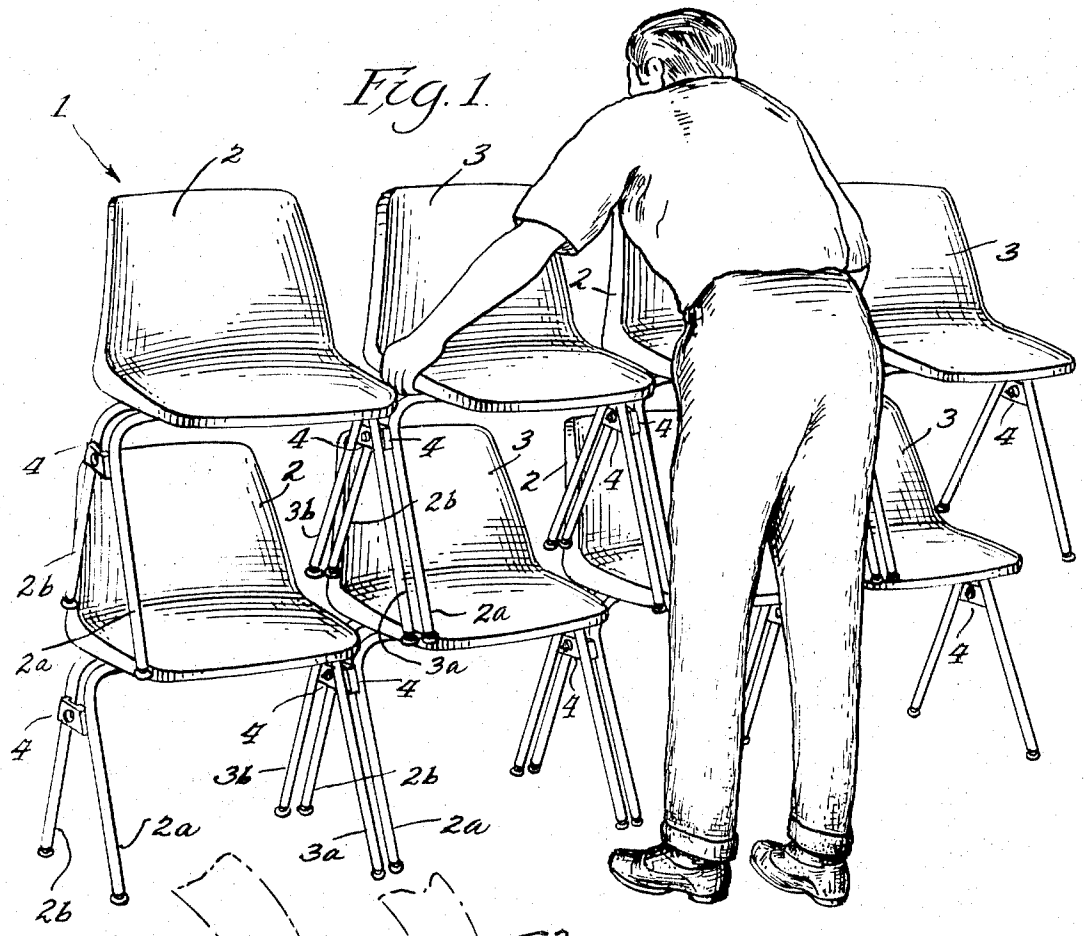

Fig. 3.

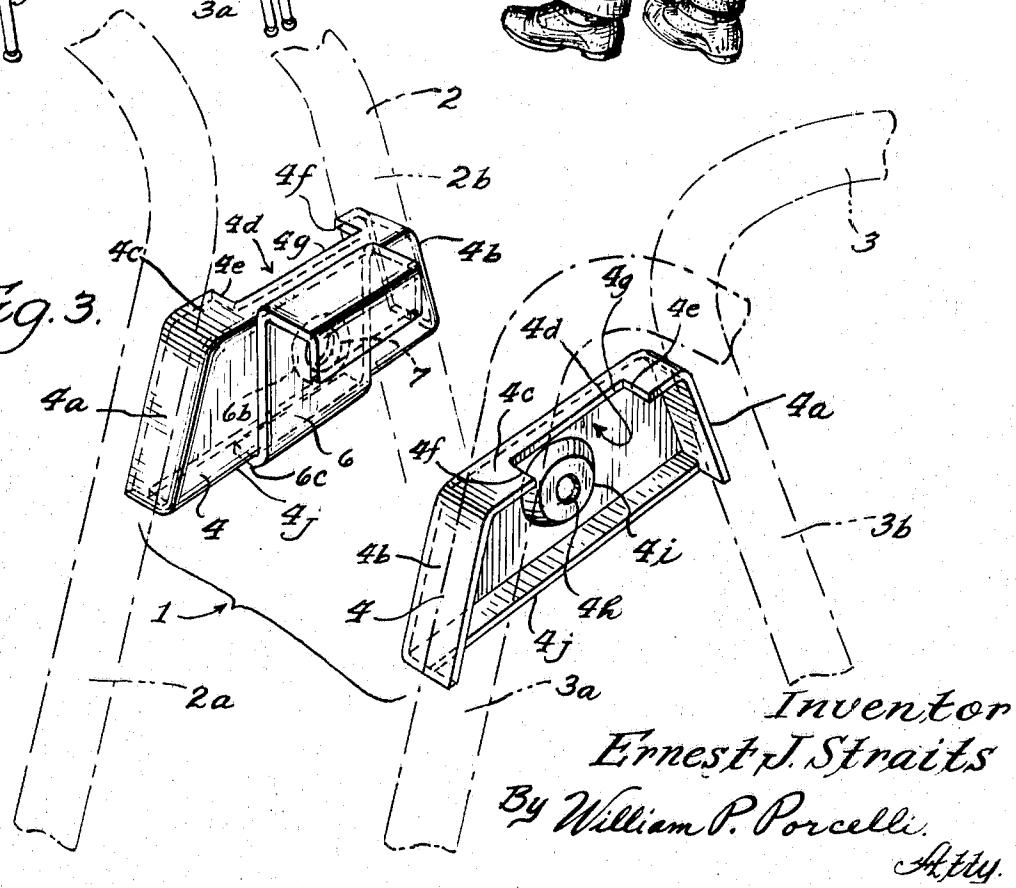

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Fig. 2.

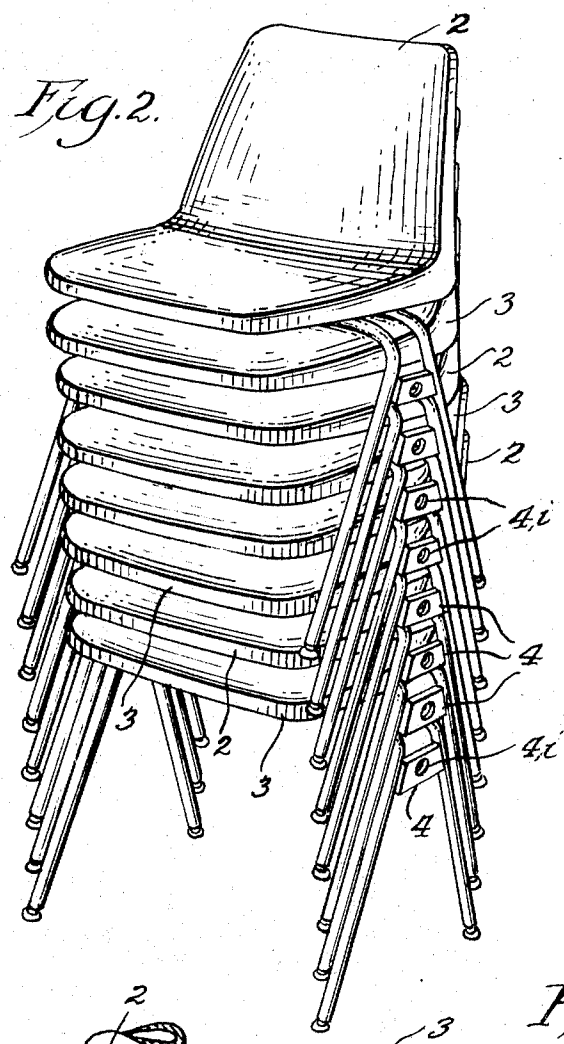


Fig. 4.

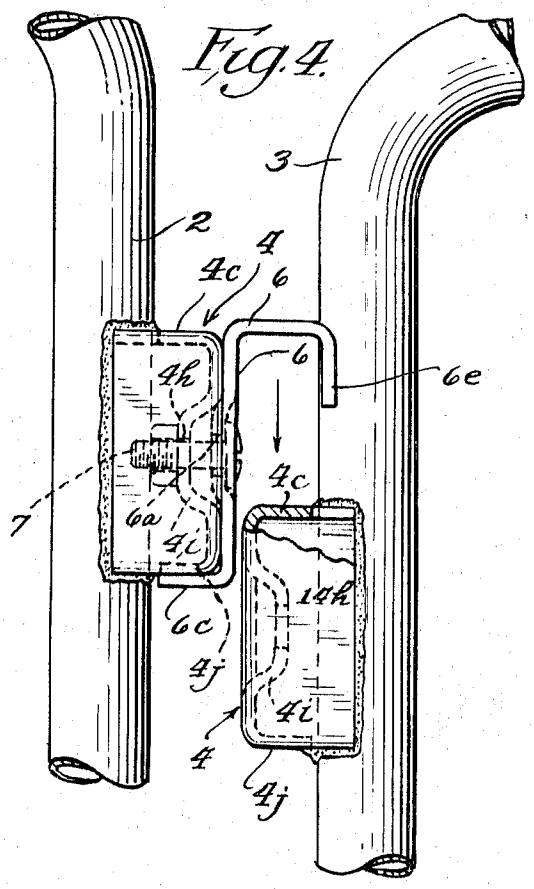


Fig. 5.

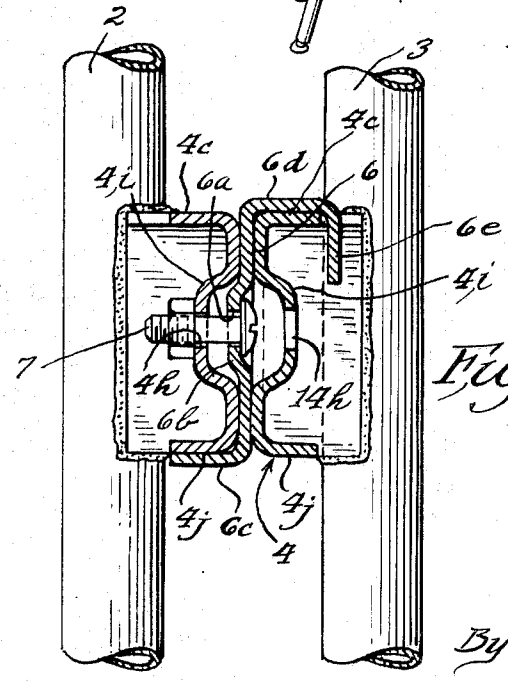
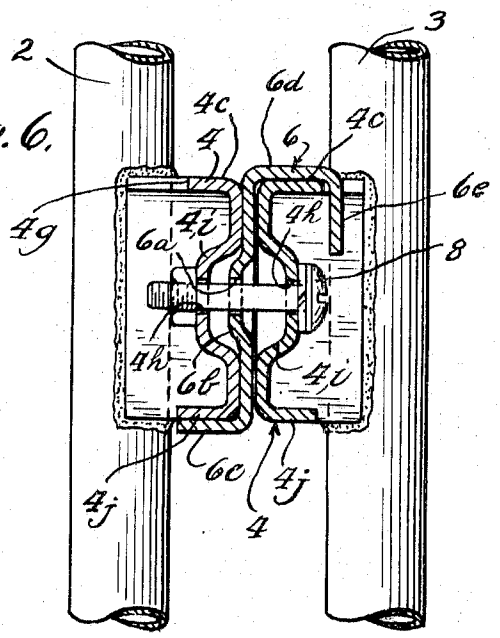


Fig. 6.



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GANG CHAIR CONSTRUCTION

This is a continuation of application Ser. No. 87,799, filed Nov. 9, 1970.

This invention relates to the art of chair manufacture and particularly to improved mechanism for ganging together chairs in a continuous row.

In chairs designed for multiple seating, especially commercial or institutional types, they often involve large seating capacity with frequent or infrequent rearrangement of the seats in varying numbers of rows and of chairs. For this reason, it is desirable to have connecting means for the chairs which are easily joined and easily disconnected as necessary.

It is an important object of this invention to provide a ganging or joining means for joining together chairs of the type described which is simple in construction, inexpensive to manufacture, neat in appearance and which can be connected and disconnected with a minimum amount of effort and time.

In order to accomplish this object, a ganging device is provided which permits hooking one part on one chair into another part on an adjacent chair in side-by-side arrangement with it. The hooked portion is preferably a separate piece which can be connected when the chairs are to be ganged together or removed if it is desired to use the chairs without any ganging structure.

Another object of the invention is to provide ganging portions which serve a secondary function as a leg brace and as a spacer to maintain a fixed distance between chairs in a row.

It is another object of the invention to provide a hook member of a design which can maintain a fixed straight alignment of the chairs arranged in a row and is further provided with an optional fastening means to clamp the hooked member rigidly in position with the portions of the adjacent chairs it engages in order to secure the chairs rigidly together in a row. One of the particular advantages of this rigid arrangement is the facility to easily lift a ganged row of chairs and manipulate it as a unit to a change of location. This has a further advantage when the chairs are of the stacking variety because it enables a rigid row of chairs to be conveniently stacked upon another rigid row of chairs which greatly reduces the time involved and the manpower necessary for rearrangement purposes which can be extremely time-consuming with chairs employed in an amphitheatre type of room, for example.

It is another object of the invention to provide ganging means which lends itself to both a simple hooking arrangement for temporary hooking together of the chairs or for a more permanent type of ganging which is more desirable when several chairs are to remain in a rigid row for any length of time.

It is another object of the invention to provide a standard chair brace portion of the ganging device which is reversible for either the left-hand or right-hand side of a chair to minimize the number of parts necessary and to provide the extra advantage of permitting the chairs to be arranged in a row facing alternately in opposite directions or any combination of alternate opposite positioning without requiring special parts.

Other objects and advantages of the invention can be understood upon reference to the accompanying drawings, in which:

FIG. 1 shows a perspective view of a plurality of chairs joined together by the ganging means of this invention and being manipulated in joined multiples for arrangement;

FIG. 2 shows a perspective view of a plurality of the chairs shown in FIG. 1 arranged in a stacked manner;

FIG. 3 shows a perspective view of the ganging means of the invention and the respective locations of the two main portions of the ganging device on two adjacent chairs which are indicated in phantom outline;

FIG. 4 shows a front elevation of the ganging means on two adjacent chair portions with the two main portions of the ganging means positioned immediately prior to joining together for connection;

FIG. 5 shows a front elevation of the ganging means of FIG. 4, except that the portions of the ganging means are shown connected, and

FIG. 6 shows this alternate form of ganging means employed when the chairs are to be semi-permanently joined together.

As indicated in FIG. 3, the ganging means 1 for joining together one chair 2 with another chair 3 consists of one connector member 4 and a second connector member 4 which are located at the same horizontal level of adjacent chairs 2 and 3 and with a member 4 welded between side legs 2*a* and 2*b* on one chair 2 and another member 4 welded between legs 3*a* and 3*b* on the other chair.

Each connector member 4 is provided with two downwardly divergent and walls 4*a* and 4*b* which extend from a top wall 4*c*. The end walls 4*a* and 4*b* are the portions welded to the chair legs 2*a* and 2*b*. The top wall 4*c* is provided with a recess 4*d* having inner side walls 4*e* and 4*f* and an inner wall 4*g*.

A hook member 6 is secured to a connector member 4 by means of a bolt 7 which extends through openings 6*a* and 4*h* in the hook member 6 and the connector member 4, respectively. This arrangement is better indicated in FIGS. 4 and 5. It should be apparent that the hook member 6 can be secured to ether member 4 since they are identical.

To facilitate positioning of the hook member 6 onto a connector member 4, the hook member 6 is provided with a central dished portion 6*b* which aligns concentrically with a dished portion 4*i* of the connector member 4. In addition, the hook member 6 has a lower outwardly turned lip 6*c* which engages the lower edge 4*j* of the connector member 4 and prevents rotation of the hook member relative to the connector member 4. The top edge of the hook member 6 is provided with a horizontal flange 6*d* which connects to a downwardly extending vertical flange 6*e* which together form a hook.

With the hook member 6 in the position as indicated in FIGS. 3, 4 and 5, ganging of the two adjacent chairs 2 and 3 is accomplished by elevating the chair 2 so that the hook member 6 is above the connector member 4 on chair 3 and then lowering the chair 2 until the hook member engages the recess 4*d* of the connector member 4 on the chair 3. The elongated flat surface of the top wall 4*c* engaging the similar elongated flange 6*d* of the hook member 6 provides a lateral stability tending to overcome rotation of one chair relative to the other. In addition, the two end walls 4*e* and 4*f* of the connector 4 limit transverse shifting of one chair relative to another.

It is apparent that the connector member 4 on adjacent chairs, one on the left-hand side and the other on the right-hand side of a chair, are identical in construction and can be employed interchangeably. Further-

more, the chairs 2 and 3 can be reversed to extend in opposite facing directions without any change in parts, provided a hook member 6 is provided on either one of the connector members 4.

If it is intended to more permanently affix one chair to another, a longer bolt 8 is employed which extends through the openings 4*h* in both connector members 4 and through the opening 6a in the hook member 6. The connector members 4 are both open inwardly so that there is free access to these holes 4*h* for the insertion of the bolts 7 or 8. It should be apparent from FIG. 6 that the bolt 8 must be removed before the two chairs can be disconnected from each other. This is identified as the semi-permanent ganging connection to distinguish it from the ganging connection of FIG. 5 where one chair can be easily disconnected from another by changing the elevation of the one and disconnecting the hook member 6 from a connector member 4.

As shown in FIG. 2, the chairs 2 and 3 are of a type with downwardly divergent legs to which the connector members 4 are joined and this type of chair can be stacked in the manner shown and the ganging means does not interfere with the stacking ability of the chairs.

As especially shown in FIG. 1, there are two rows of four chairs ganged together by the alternate semi-permanent ganging means of FIG. 6 which permits the four chairs to be handled as a rigid single unit with the four chairs arranged fixedly in a straight line. In this manner, the one row of four stacking chairs can be manipulated to be stacked with the other rigid row of four stacking chairs without separating the chairs and handling them individually. It should be apparent that any number of chairs can be connected in a row and handled in a like manner, depending upon the ability of the workers to lift the connected rows of chairs.

Although only two principal embodiments of the invention have been shown and described, it should be clearly understood that the invention can be made in many different ways without departing from the true scope of the invention as defined in the depending claims in which:

I claim:

1. In a chair construction of a type having a seat and a pair of legs extending downwardly from each side thereof, means for securing such chairs in a row comprising: a connector member rigidly supported by each leg of one of said pair of legs on one side of a chair and another connector member rigidly supported by each leg of a said pair of legs on the opposite side of the chair, said connector members having a top wall portion and a generally planar face portion and being supported at approximately the same level from the lower ends of the legs, a separate hook member fastened to the chair by separable fastening means to one of said connector members along its outside face with a hook portion extending outwardly therefrom, each connector member having a hook portion receiving region on the top wall portion engageable with the hook portion of a hook member on another chair to provide a freely detachable hooked connection between two chairs arranged in adjacent side-by-side relation with the hook member on a first connector member on one of the two chairs freely hooked to the hook portion receiving region of an adjacent second connector member to which no hook member is secured on the other of the two chairs, said hook member having a vertically extending planar body portion extending parallel to and abutting the generally planar face portion on the connector member to which it is fastened and parallel to and abutting a corresponding planar face portion on the other connector member to which the hook member is detachably hooked, to thereby sandwich the planar body portion of the hook member between the two connector members, and the spacing of the hook portion receiving region of the other connector member from the corresponding planar portion thereon is substantially the same as the spacing of the hook portion of the hook member from its said vertically extending planar body portion, whereby movement of the hook member on one chair must be made in close proximity to the other connector member on the other chair in order to guide the hook member into its hooked position, each of said connector members having a dished portion surrounding a fastener receiving opening to receive said separable fastening means, said hook member also having a dished portion which aligns with said connector dished portion, such openings in two hooked together connector members of two chairs arranged in adjacent side-by-side relation being located for axial alignment with each other and with an opening in said hook member, said separable fastening means being positionable through one of said openings in a connector member and said opening in the hook member to provide a fastening of the hook member to only one of the chairs, said separable fastening means also being positionable through the openings in both of the two hooked together connector members of the two chairs and the opening of the hook member sandwiched between the connector members to provide a fastening of the hook member to both of the hooked together connector members and thereby fasten together the two chairs.

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