

[54] **GANGING DEVICE**

[72] Inventor: **Ernest A. Weslock, Sturgis, Mich.**
 [73] Assignee: **The Sturgis Company, Sturgis, Mich.**
 [22] Filed: **June 8, 1970**
 [21] Appl. No.: **44,361**

2,470,811 5/1949 Engleman248/316 PC
 3,492,046 1/1970 Wittner et al.....297/248
 978,398 12/1910 Risehard.....24/81 CC
 1,510,805 10/1924 Smith24/81 CC

FOREIGN PATENTS OR APPLICATIONS

210,714 2/1924 Great Britain.....297/248
 253,555 9/1962 Australia.....248/DIG. 1

[52] U.S. Cl.297/248, 287/104, 24/81
 [51] Int. Cl.A47c 1/124
 [58] Field of Search287/104, 118, 110; 24/81 CC;
 297/248; 108/64; 248/DIG. 1

Primary Examiner—Andrew V. Kundrat
Attorney—Emory L. Groff and Emory L. Groff, Jr.

[56] **References Cited**

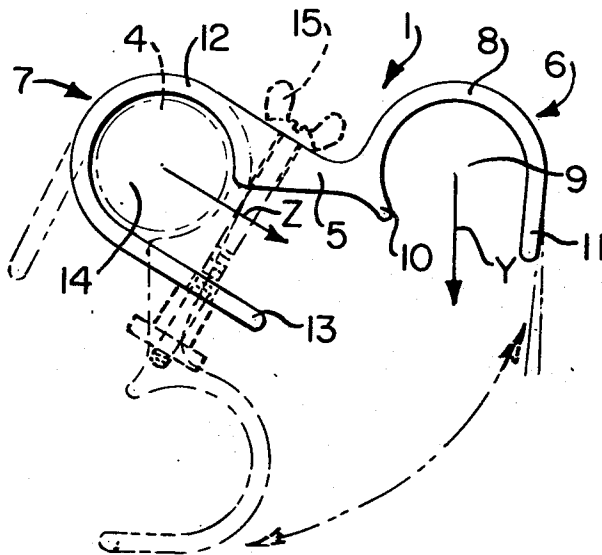
UNITED STATES PATENTS

229,670 7/1880 Carrick287/110 UX
 1,338,746 5/1920 Mathias287/118
 1,915,924 6/1933 Coe.....248/316 D

[57] **ABSTRACT**

A chair ganging device includes an elongated member having an attaching element pivotally connected to a tubular member of one chair. A resilient clamp element adjacent the attaching element includes a snap cavity adapted to removably engage a similar juxtaposed tubular member of an adjacent chair.

6 Claims, 4 Drawing Figures



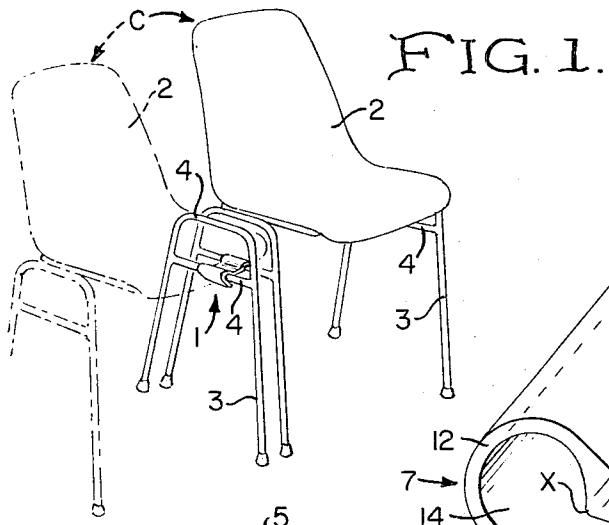


FIG. 1.

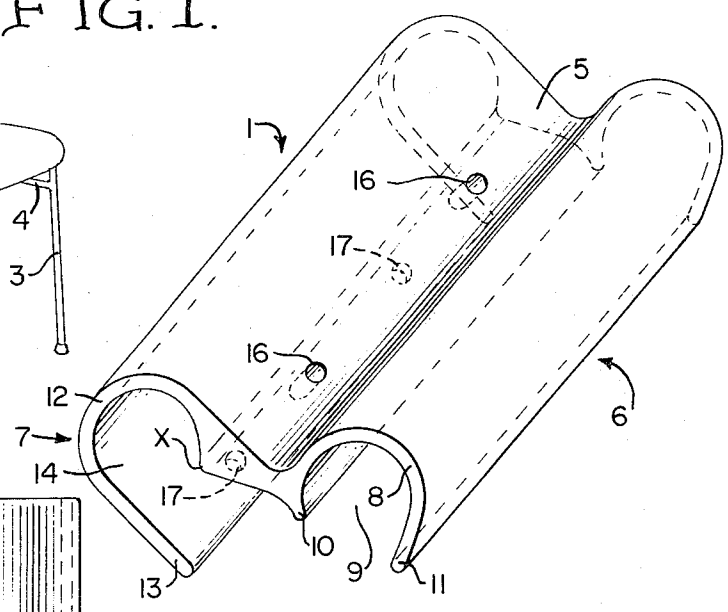


FIG. 2.

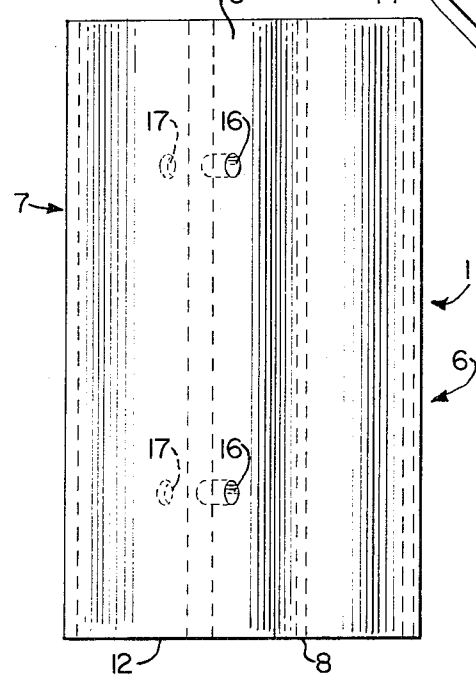


FIG. 3.

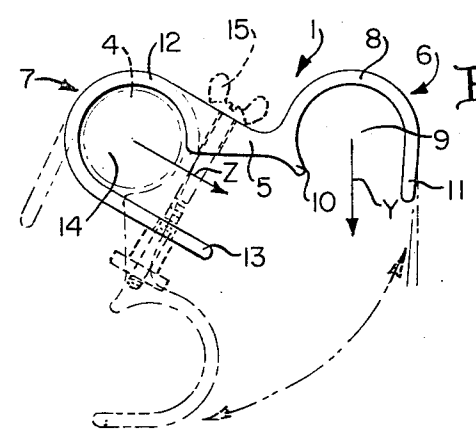


FIG. 4.

INVENTOR

ERNEST A. WESLOCK

BY *Ernest L. Broff*

ATTORNEY

GANGING DEVICE

This invention relates generally to a connecting member and more particularly to a readily removable device that may be pivotally attached to a chair to permit the joining of two or more chairs in a laterally adjacent ganging relationship.

Many prior known arrangements have been utilized for coupling two or more chairs in row-fashion for the purpose of handling many chairs simultaneously such as when setting up seating arrangements for a meeting or convention. The advantages of such a coupling member are readily apparent since not only is the labor reduced during the spotting of the chairs in their desired location, but also the lateral alignment of the chairs is insured during their subsequent use. Many of the prior devices involve elaborate connecting members which in themselves are expensive to fabricate and then require either special modification of a portion of the chair to which they are to be attached or necessitate the expenditure of excessive labor in attaching the device to the chairs. There are certain chairs available which are initially constructed with means permitting lateral ganging of the chairs. Some of these include the provision of a male and female connecting device permanently affixed to opposite sides of each chair such that when any two chairs are moved into lateral juxtaposition, these elements may be interlocked. A shortcoming of such an arrangement is the unsightly appearance of the male and female elements projecting outwardly from the two sides of a chair when the chair is not being used in a ganging arrangement. In such a situation, these projecting elements also provide a hazard which may snag ladies' hosiery.

By the present invention, a unique arrangement is provided comprising a single ganging device which is of relatively inexpensive construction and lends itself to ready fabrication from any of several plastic compositions by means of conventional extrusion processes. This ganging device is adapted to be quickly attached to only one side of each chair and includes an attaching element on the one hand and a snap element on the other hand such that when ganging of a plurality of chairs so equipped is desired, the snap element of the ganging device on one chair is readily and instantly attachable to the juxtaposed leg or frame member of an adjacent chair.

An attractive feature of the present ganging device is the pivotal mounting thereof which permits swinging a snap element of a device downwardly in an out-of-the-way manner whenever the chair is not being used in a ganging situation.

Accordingly, one of the objects of the present invention is to provide a chair ganging device comprising a unitary member mounted on one side of a chair and constructed of a material possessing inherent resilience.

Another object of the present invention is to provide a chair ganging device including a pivotal attaching element on the one hand and a swingable snap element on the other hand, the two elements adapted to engage corresponding tubular portions of two adjacent chairs.

A further object of the present invention is to provide a unitary ganging device including a central web portion having an attaching element adjacent one side thereof adapted to pivotally engage a tubular member on one chair. A parallel snap element adjacent the other side of the web portion is swingable from a horizontal position engageable with the tubular element of an adjacent chair to a downward position when the first chair is not being assembled in a ganging member.

With these and other objects in view which will more readily appear as the nature of the invention is better understood, the invention consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred embodiment of the invention is shown in the accompanying drawing, in which:

FIG. 1 is a perspective view illustrating the ganging device of the present invention as it appears when serving to couple a pair of adjacent chairs.

FIG. 2 is a perspective view, greatly enlarged, of the ganging device as shown in FIG. 1.

FIG. 3 is a top plan view of the ganging device of FIG. 2.

FIG. 4 is an end elevation of the ganging device of the present invention and illustrates by means of broken lines the alternate position of the device when mounted on one chair and not being used to provide a coupling with another chair.

Similar reference characters designate corresponding parts throughout the several figures of the drawing.

Referring now to the drawing, more particularly FIG. 1, the present invention will be seen to comprise a coupling or ganging device generally designated 1 employed to laterally connect a pair of chairs C—C in a side-by-side relationship. It will be appreciated that the ganging device 1 may be utilized in combination with chairs of various construction and that the present invention is not wholly dependent upon a specific type of chair as shown in FIG. 1, which is merely exemplary. The selected chair will include a back/seat assembly 2 as well as a supporting leg assembly 3. The ganging device 1 is adapted to be mounted upon one of the tubular members 4 comprising the leg or frame assembly of a chair. It will be understood that if this assembly 3 includes two or more horizontal tubular members 4 on each side of the chair such as shown in FIG. 1, that the ganging device 1 may be mounted upon either the upper or lowermost members 4 and in fact may even be carried by either one or both of the tubular legs themselves. The illustrated arrangement is the preferred manner of installation since only a single ganging device 1 is required when attaching same to a horizontal tubular member 4 whereas if the legs themselves were used to attach a coupling member, this would require a separate device 1 both for the front legs and for the rear legs in order to achieve positive lateral alignment.

The ganging device 1 itself is shown most clearly in FIG. 2 and comprises an elongated clamp member preferably of integral construction and which may be formed from any of several materials. The construction as illustrated lends itself to ready fabrication by extrusion using PVC, ABS, polycarbonate or any one of several other plastic compositions both thermoplastic or thermosetting. For reasons which will become apparent hereinafter, the selected material must possess at least a limited degree of resilience, and accordingly, even sheet metal may be utilized for the construction of the ganging device.

As shown in FIGS. 2 and 4, the ganging device 1 comprises a unitary member including a central web portion 5 extending longitudinally and disposed medially of a swingable, detachable snap element 6 and a pivotal attaching element 7. The snap element 6 is defined by an arcuate or semi-circular wall 8 which provides a downwardly opening snap cavity 9 therein. The circular portion of the wall 8 preferably describes an arc of no less than 180° from the lower edge 10 adjacent the central web portion 5 to a point disposed adjacent the straight lip 11 forming the lateral distal portion of the snap element 6. The attaching element 7 includes a partially circular or arcuate wall element 12 which will be seen to describe an arc substantially greater than 180° beginning at the point X adjacent the web 5 to a point adjacent the straight holding flange 13 which extends substantially below and beyond the bottom of the clamp cavity 14 formed by the circular wall segment 12.

The manner of utilizing the ganging device 1 of the present invention will now be described. The ganging device is initially attached to one tubular member 4 on one side of a chair C by means of the attaching element 7. The device is lowered over a tubular member 4 with the web portion 5 and holding flange 13 disposed on opposite sides of the tubular member 4 and by the application of a slight manual pressure, the holding flange 13 will be deflected away from point X of the web portion 5 so that the tubular member 4 will be forced into the clamp cavity 14 of the attaching element 7. The diameter of the circular portion of the cavity 14 may be initially constructed so as to provide a slight undersize with respect to the diameter of the tubular member 4 of the particular chair being used, whereby it will be apparent that a built-in type of frictional engagement will be assured to enhance the tension of the attaching element 7 in position upon the tubular member 4. The particular material selected for the construction of the ganging device 1 will of course determine the degree of biasing action afforded by the attaching element 7 as well as the snap element 6.

In order to provide a more positive or rigid attachment of the device to the tubular member 4 which is disposed within the clamp cavity 14, provision may be made for the inclusion of adjustable fastening members generally designated 15. Any suitable signal or multiple-part fasteners 15 may be employed in order to apply tension between the holding flange 13 and the central web portion 5 in order to increase the clamping action of the attaching element 7 about its tubular member 4. Accordingly, it will be seen that one or more holes 16 are provided through the central web portion 5 and are disposed opposite to a corresponding number of holes 17 through the holding flange 13. With this arrangement as shown in FIG. 4, tightening of the fastener 15 will provide additional clamping action between the attaching element 7 and the tubular member 4.

Regardless of whether or not one or more fastening members 15 are utilized, it will be understood that the attaching element 7 provides means for mounting the ganging device 1 upon a selected tubular member 4 on one side of a chair. By this arrangement, the ganging device may either be provided at the time of manufacture of the chair, or readily attached at any time thereafter, even by the ultimate user at any time he so desires, to provide an arrangement of ganged chairs. The ganging device may be left on one side of the chair when it is being used by itself, or, it may be readily removed and stored remote from the chair. When the chair is not being used in a ganging fashion, then the device 1 may be left on the tubular member 4 of the chair and will be positioned in the manner shown by broken lines in FIG. 4 whereby the snap element 6 of the device will be seen to be disposed in a lowered position beneath the attaching element 7. When it is desired to gang two or more chairs, it is but a simple matter to pivotally displace the ganging device 1 from the broken line position of FIG. 4 to an elevated position so that the snap element 6 may be lowered over a corresponding juxtaposed tubular member 4 of an adjacent chair, whereupon a rigid coupling arrangement is achieved merely by snap-fitting the detachable element 6 over the top of the juxtaposed tubular member 4. Again, the inherent resilience of the snap element 6 insures retention of this element about the tubular member 4 and the inwardly extending projection of the lower edge 10 further insures this retention of the wall 8 of the snap element 6 about the tubular member. It will be seen that the lip 11 which preferably projects beyond the radius of the major portion of the wall 8 thus provides a finger lift to permit ready removal of the snap element from its engagement about a tubular member 4.

The axis of the throat y leading to the snap cavity 9 and the throat z leading to clamp cavity 14 will be seen in FIG. 4 to be disposed such that an underlying tubular member 4 contained within both of these cavities is completely shielded from top view by users of either one of the two adjacent chairs. The inclination of the throat z when the ganging device 1 is in the horizontal position provides for this concealment also when the ganging device is in the vertical position such as will be the

case when the chair is not coupled with an adjacent chair.

I claim:

1. A ganging device for laterally joining adjacent chairs having juxtaposed tubular members, comprising, a longitudinally extending snap element including an arcuate wall defining an open throat cavity adapted in its normal at-rest configuration to removably engage and release the tubular member of one chair, a longitudinally extending attaching element joined adjacent to said snap element and including an arcuate wall defining an open throat cavity adapted in its normal at-rest configuration to removably engage the juxtaposed tubular member of the adjacent chair, said two arcuate walls each describing an arc of no less than 180° and the opposed distal portions of each said wall normally disposed a distance from one another that is less than the diameter of said tubular members, said two elements of inherently resilient construction whereby said two walls may be positioned adjacent said tubular members and radially urged against same to deflect said walls to snap fit said elements about said tubular members, the access to said attaching element cavity intersecting the access to said snap element cavity whereby when said snap element is disposed below said attaching element said attaching element cavity is masked from view above, a single central web portion between and adjoining said two elements and well spacing said two arcuate walls from one another to permit independent deflection of either of said walls without affecting the disposition of the other of said walls, the two lateral edges of said web portion integral with the adjacent free edge of each said two elements respectively, a flange extending tangentially from one end portion of said arcuate wall of said attaching element and projecting well beyond the periphery of said tubular member contained within said attaching element to a point adjacent one end of the snap element cavity, and means urging said flange towards said web portion to retain yet permit rotation of said attaching element about its tubular member as said snap element is alternately connected to and removed from said tubular member of said adjacent chair.

2. A ganging device according to claim 1 wherein, the center axes of said two cavities are parallel.

3. A ganging device according to claim 1 wherein, said arcuate walls include portions circular in cross-section whereby said cavities are adapted to engage tubular members circular in cross-section.

4. A ganging device according to claim 1 wherein, said device is of unitary construction comprising a resilient material.

5. A ganging device according to claim 1 wherein, said web and flange are provided with opposed openings, and fastening means are disposed through said openings to regulate the biasing force of said attaching element about its respective tubular member.

6. A ganging device according to claim 1 including, a lip extending from the end of said snap element arcuate wall opposite that end joined to said web portion.

* * * * *

60

65

70

75