

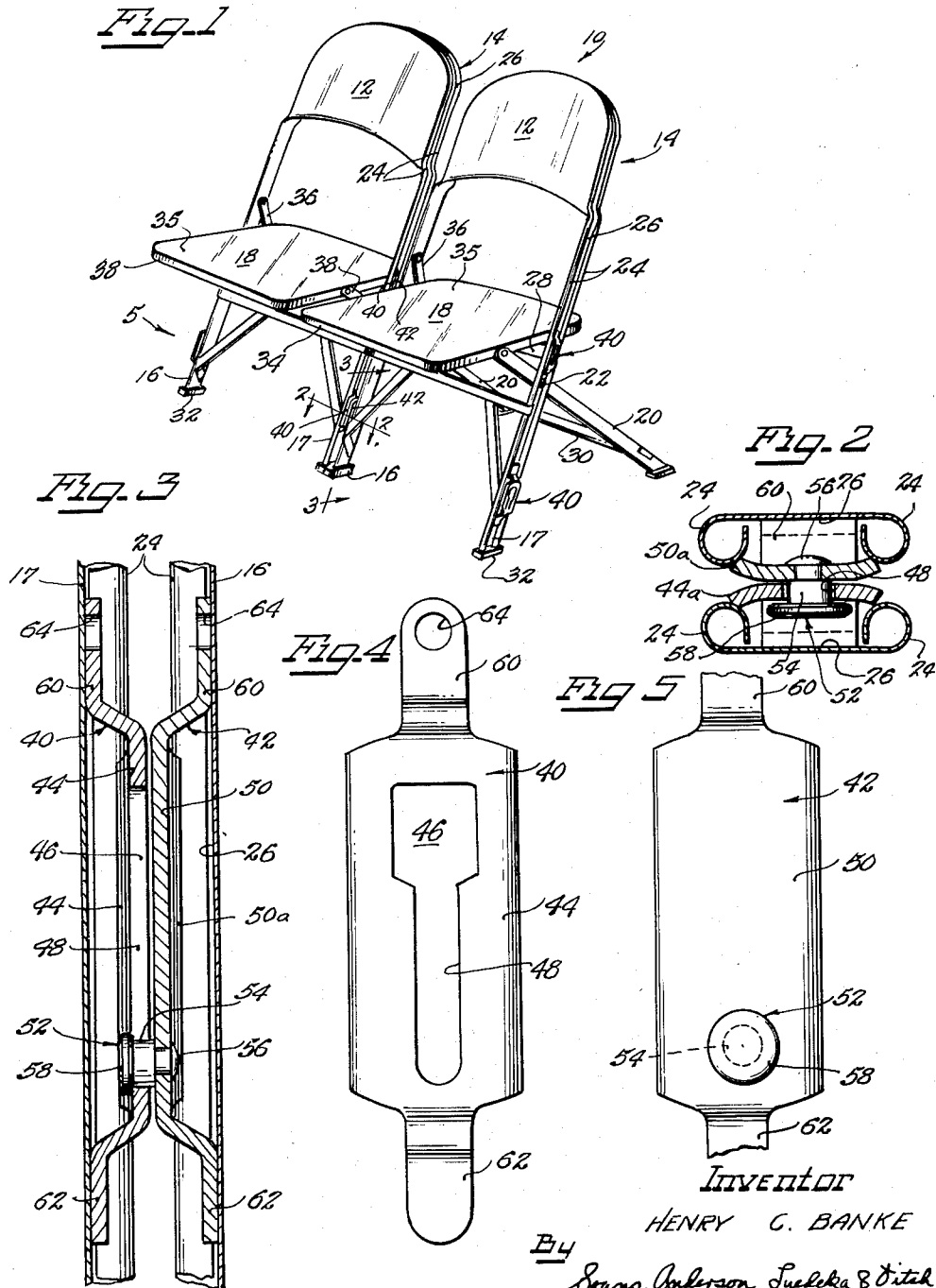
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CHAIR

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CHAIR

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The present invention relates to folding chairs and is more particularly concerned with such chairs which are adapted to be semi-permanently fastened together in groups, as when used as seating in an assembly room or auditorium; which are not likely to become separated inadvertently, but which are readily and easily separated at will.

Folding chairs have, of course, attained great utility, particularly where temporary or removable seating is desired, and where a minimum of storage space is available for storing the chairs when not in use. Therefore it is important that any arrangement for fastening the chairs together shall not interfere in any way with folding of the chairs when desired.

It is a primary object of the present invention to provide a folding chair or more properly a set of folding chairs having means for temporarily or semi-permanently locking adjacent chairs together. A further object of the invention is to provide improved locking means whereby the legs of a chair may be linked or connected with the adjacent legs of other chairs placed next to it. Still another object of the invention is to provide such a locking means which is sturdy, easily fabricated, and readily fastened to the chair. Another object is to provide a locking means which is readily mounted on or fastened to the usual channel section chair leg, and when so fastened is unobtrusive, extremely rugged, and which does not interfere in any way with the use of the chair or the folding thereof. Other objects and advantages will be apparent from the following description of the selected embodiment of the invention.

In the drawings:

FIGURE 1 is a perspective view of a group of folding chairs embodying the present invention;

FIGURE 2 is an enlarged sectional view taken along the line 2-2 in FIGURE 1;

FIGURE 3 is an enlarged sectional view taken along the line 3-3 in FIGURE 1;

FIGURE 4 is an elevation of a part indicated in FIGURES 2 and 3; and

FIGURE 5 is an elevation of a similar or complementary part indicated in FIGURES 2 and 3.

A group or set of folding chairs 10 embodying the novel features of the present invention is illustrated in the drawings. As seen particularly in FIGURE 1, each folding chair includes a back rest 12 affixed to a U-shape frame 14 providing at its lower extremities a pair of forward legs 16 and 17, a seat 18 and a pair of rearward legs 20 which are foldable relative to the U-shape frame 14 about aligned pivots 22 which interconnect intermediate portions of the forward and rearward legs. The back rest 12 and seat 18 may be of any suitable material, but are preferably padded for greater comfort. The U-shape frame 14 is formed from a flat strip of metal with the edges rolled to provide beads or flanges 24, which, together with the remainder of the strip or web portion 26, form essentially an outwardly open channel section. The beaded portions of the frame act as stiffening means (FIG. 2) for attaching certain bracing portions and the locking means in a manner to appear. The rearward legs 20 are similarly formed of metal, but with the beaded portions facing inwardly to thereby provide a channel section for receiving the flanged end portions of a pair of cross brace members 28 and 30 (FIG. 1). The free

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ends of the four legs are preferably provided with molded rubber feet or the like.

The seat 18 preferably comprises a metal frame 34 to which is secured a wood seat panel 35. The seat 18 is supported on opposite sides, adjacent its rear edge, by a pair of links, such as 36, which are pivotally connected at their upper ends to an upper portion of the U-shape frame 14 and at their lower ends to the metal frame 34 which encircles the seat. Forwardly of the seat supporting links 36, the seat 18 is further pivotally supported at opposite sides by the upper ends of the rearward legs 20, as by pivots 38. Thus, it is seen that, as legs 16 and 20 are moved together about pivot 22, the upper ends of the rearward legs 20 force the seat 18 rearwardly and upwardly to the collapsed position, not shown, suitable stops being provided to determine the chair forming, and the folded positions, all as more fully disclosed in the patent to John H. Clarin, 2,996,331, August 15, 1961, and unnecessary to describe further, since the specific manner of folding is not a part of the present invention. Sufficient to say, when the chair or chairs are being folded from the chair forming position shown in FIG. 1, the legs 16 and 20 move toward each other, much like a pair of scissors, and, if the chair is to be folded readily, there must be nothing to interfere with this closing movement.

It will be apparent that, if two or more of such chairs are placed beside each other, adjacent legs will take contiguous positions, or such positions that the leg 16 of one chair will be disposed substantially parallel to a leg 17 of the adjacent chair, and that fastening adjacent legs together will secure the chairs in position in ganged or grouped relation.

Each front leg 17 has a pair of spaced brackets generally designated as 40, one a few inches above foot 32, and the other preferably just above cross brace 28, or just above the juncture of leg 17 with leg 20, or in other words just above pivot 22. Similarly, each leg 16 has a pair of spaced brackets generally designated as 42 (FIG. 3), similarly spaced, so that when the chairs are placed together, pairs of brackets 40 and 42 will come into registering or abutting relation, each pair of brackets constituting one clamping means, and each bracket of each pair comprising a half-part, two of which, placed together, make up a single clamping or fastening means. Each bracket 40 comprises a plate-like portion 44 providing an opening 46, said opening having a reduced portion 48 arranged in the direction of the longest dimension of plate 44. Bracket 42 comprises a similar plate-like portion 50, preferably of comparable size, but instead of having an opening it is provided with a stud, rivet, or button portion 52, of a size to fit closely within reduced portion 48 of opening 46, stud 52 being fixed on plate 50 in any suitable manner, in the present instance by means of a reduced portion 54 extending through plate 50 and having a head 56 on the opposite side of plate 50 from portion 52. Stud 52 is also provided with an enlarged head portion 58 of a size to pass readily through the larger part of opening 46, but too large to pass through reduced portion 48. As will be apparent, if all the legs 16 of a set of chairs are provided with brackets of the type of bracket 42, while all the legs 17 are provided with brackets of the type of bracket 40, each stud 52 will be presented toward an opening 46 whenever a plurality of chairs are placed together. It is merely necessary to lift one chair sufficiently to pass the heads 58 through the openings 46 whereupon, upon release, studs 52 will become locked in reduced portions 48 of openings 46 and the chairs will be locked together against individual movement in ordinary use.

Plate 44 is provided with upper and lower tongues 60 and 62, respectively, which angle inwardly toward web portion 26 and have their extremities lying flat against web portion 26 between rolled portions or flanges 24.

The parts are preferably so proportioned that plate 44 will be in firm contact with the outer portions of the rolled edges or flanges and provide a smooth curved surface therewith when tongues 60 and 62 are in contact with web 26. Tongues 60 and 62 are secured in any suitable manner within the channel between flanges 24, as for example by welding to web 26, an opening 64 being provided in tongue 60 through which welding may be done to facilitate this operation. Other fastening expedients are contemplated as within the scope of the invention.

Since such chairs are often handled more or less continuously, it is desirable to have them as smooth and free from protruding parts, particularly sharp edges, as possible. Therefore it is preferred that plates 44 and 50 be curved inwardly at their edges as seen at 44^a and 50^a in FIG. 2, so as to contact rolled edges 24 inwardly from their outer faces. In this way a smoother over-all contour is possible than that which can be secured by flat plates.

As will be apparent, a substantially identical tongue construction is preferably used in the case of plates 50 of brackets 42.

When it is desired to lock a plurality of chairs together in a gang, it is merely necessary to lift the portion of each chair carrying the brackets 42, place the studs through openings 46, and lower the chair portion so that studs 52 become engaged in the reduced portions of openings 46, whereupon the chairs will be fastened together without likelihood of becoming inadvertently separated. It is to be noted that, since brackets 40 and 42 are fastened to the front legs 16 and 17 only, there is no interference by the brackets with any folding or unfolding movements of the chairs, and indeed it is entirely practical to fold a group of chairs as a whole, without unlocking them from each other, as is often convenient in clearing a gymnasium quickly, for example, after its use as an auditorium.

By reason of the spacing of the upper brackets from the lower brackets, the adjacent legs of neighboring chairs are more firmly and dependably fixed together than would be the case if only one bracket were used on each leg, and the strain on any one bracket, as a result of moving a group of chairs in a gang, is greatly reduced. In this way possible damage to the fastening means is prevented.

Although shown and described with respect to a particular embodiment, it will be understood that various modifications might be made without departing from the principles of this invention.

What is claimed is:

1. In combination, a folding chair of the type com-

prising a seat and front and rear downwardly extending legs, said front legs being disposed along the side margins of said seat in a forwardly inclined position, so that the right front leg of one chair will lie adjacent the left front leg of the adjacent chair when two of said chairs are placed together side-by-side, said front and rear legs being crossed and pivotally interconnected intermediate their ends, a pair of longitudinal brackets having plate portions fixed to the outer face of each of said front legs and extending generally in the forwardly inclined direction of said legs, said bracket plate portions being spaced apart along said legs so as to be spaced both horizontally and vertically from each other and with one bracket plate portion below and one bracket plate portion above the pivotal connection between the front and rear legs and each pair of said bracket plate portions being similarly located on each of said front legs so as to contact a similar pair of bracket plate portions when a pair of said chairs are placed side-by-side, and interlocking means on said bracket plates comprising a stud extending outwardly from one bracket plate and having an enlarged head portion, and means defining an elongated slot formed in the other bracket plate having an enlarged upper portion for receiving said enlarged head portion of said stud and a reduced width lower portion, whereby relative vertical movement of adjoining chairs in the direction of said legs is effective to move said studs on one pair of bracket plate portions into the enlarged upper portion of said elongated slots in the adjoining bracket plate portions and then into interlocking relation with said reduced width lower portion of the slots.

2. The combination set forth in claim 1, wherein each of said legs is formed with an outwardly open channel section, and each of said bracket plate portions has a pair of inwardly offset tongue portions for securing said bracket plate portions to the web of said channel section with the main central portion of said plate projecting outwardly beyond the flanges of the channel section on the leg.

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