Fig. 1.

Fig. 2.
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CHAIR COUPLING CONSTRUCTION
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1 Claim. (Cl. 297—248)

The present invention relates to new and useful improvements and structural refinements in means for coupling together two or more independent auditorium type chairs to form a row thereof wherein the individual chairs forming the units of the row are incapable of independent and/or separate movements when so coupled together by the said means.

It is directed particularly to the provision of a generic form of coupling and a variety of species of same for the holding together of two or more independent chairs in clamped or locked relationship.

It is a principal object of this invention to provide an inventively novel coupling construction of the type in which chairs may be clamped together so as to offer gangs or groupments thereof.

It is a further object of my invention to provide improved means whereby the legs of a chair may be linked or connected with the adjacent legs of a chair positioned next thereto in order to maintain the chairs in a desired spaced and locked-together relation and alignment.

It is another object hereof to provide a coupling means including separate parts which may be permanently affixed to forming chairs and which will serve a dual purpose in that the components, when joined together in an interlocked manner, will securely couple adjacent chairs together, and will additionally serve to reinforce the legs of the chair when said separate parts are separated or unlocked.

The invention embraces the concept of a coupling means for ganging chairs of the foldable type, which is effective for linking a plurality of chairs together in manner as to insure the proper alignment thereof.

Another chief feature of the invention resides in the fact that each of the chairs of an assembled group or gang may be separately folded and the assembled group or gang may be moved in a body as units of a group.

The various specific forms of clamping means shown are especially adaptable for use with steel folding chairs to form a row of connected seating, although the coupling means may be used with equal facility in conjunction with chairs of other known forms, types and constructions.

Other salient objects of the invention are to provide a coupling or clamping means whereby chairs may be easily and quickly placed in a side-by-side alignment so as to form a row of connected chairs which may be easily transported as a unit, thereby facilitating the temporary placement and removal of groupments of the seating.

Further objects of the invention are to provide a coupling means conformable to the desiderata of the preceeding paragraphs and offering specific improvements in the various operating instrumentalties comprising same, which themselves are minimum in number, so that the means is simple and compact in accordance with the demands and desires of manufacturers and purchasers alike and so that it is distinctive in its appearance, practical in its value, durable in its organization, reliable in its operation, and efficient in its use.

With these objects and other incidental ends and advantages reasonably appearing, some being in part obvious and some being in part more fully pointed out in the progress of the following disclosure, it will be explained that the invention consists substantially in the combination, construction, location and relative arrangement of parts, as described in detail hereinafter, as shown in the annexed drawings, and as defined with particularity in the appended claim forming a part hereof.

A plurality of forms or physical embodiments of the invention are illustrated and it will be understood that each is capable of carrying the same into practical operation. It will be noted that the forms therein exhibited may be further varied or changed as to shape, proportion and precise manner of assemblage, all without departing from the spirit of the invention.

These above named objects are accomplished by means of such structure as will be fully apparent from a perusal of the description which follows and the illustrations in the accompanying drawings, wherein like characters of reference are employed to designate like or corresponding parts throughout the several views, and in which:

FIG. 1 is a view, in perspective, of a pair of adjacent foldable chairs having the coupling means of the invention arranged in operative position relative thereto;

FIG. 2 is an exploded perspective view of one form of preferred embodiment of the coupling means of the invention showing the interlocking parts in spaced apart relationship;

FIGS. 3—5 are exploded perspective views of other species of the coupling means of the invention;

FIGS. 6—8 are fragmentary front elevation views of additional modifications of the coupling means of the invention; and

FIG. 9 is a top plan view of the coupling means shown in FIG. 8.

With continued reference now to the drawings, which illustrate typical and preferred embodiments of the invention for purposes of disclosure and form a part of this specification, I have shown a pair of adjacently disposed folding chairs, generally indicated by A and B, with which the coupling means of my invention may be advantageously incorporated.

Said folding chairs are of more or less conventional construction, each comprising a U-shaped tubular metal front frame forming front legs 11 of the chair and a bight portion 12 in which may be secured a back panel 13, and a pair of tubular metal rear legs 14 heretofore connected to the front legs 11 in a known manner, and a seat 16 supported by the legs 11 and 14 and 11 and 14. A tie-rod 17 may connect the spaced front legs 11 near their lower ends and a similar tie-rod 18 may connect the spaced rear legs 14 near their lower ends, all as is known.

Such folding chairs are primarily manufactured for and intended for individual use, but it sometimes may be found necessary and/or desirable to connect them in groups of 2, 3, 4 or more. Such grouping facilitates the easier handling of the chairs when placing or removing them from such places as gymnasiums, ball-rooms, or the like where they may be used for temporary assembly seating.

The present invention envisions the employment of multiple clamps or couplings for so grouping the chairs.

As viewed in FIG. 1, two such folding chairs are adjacentlly disposed and clamped together in side by side alignment by means of a clamping device having a pair of halves, each of which halves is affixed to the aligned legs 11 and 14 of one of the chairs.

In the preferred embodiment of the invention, best illustrated in FIG. 2, I have shown a coupling or clamp, designated generally by 28, and comprising identical interlocking metallic members 22 and 22.

Each of said interlocking members 22 and 22 embodies a flat, elongated body or web portion 26 which extends longitudinally to form at its opposite extremities tail
portions 28 and 38, said tail portions being offset so as to be aligned in a line spaced from and parallel to the plane of the tail portions or web portion 26.

Transverse openings 32 and 34 pass centrally through the tail portions 28 and 30 respectively, through which fastening means 31 may be extended to affix each of the members 22 and 23 to the legs 11 and 14 of its respective chair.

Longitudinally extending projections or ears 36 and 38 extend vertically from the upper and lower edges of the body 26 and are bent in manner as to be J shaped in cross section so as to be spaced from the respective body or web portion 26 and to provide a slot 40 formed by the projections or ears, which slots are of appropriate dimension to receive the body or web portion of the complementary interlocking member when the pair of same are placed in a face-to-face relationship. The interlocking members 22 and 22 will extend between each of the front and rear legs 11 and 14 respectively of a pair of chairs and will be mounted in face-to-face relationship. For example, the interlocking member 22 of FIG. 2 is mounted on the aligned legs at one side of chair A, facing outwardly, and with the projection 36 being positioned to the right. The other interlocking member 22 is mounted on the aligned legs at one side of chair B facing outwardly and with the projection 36 being positioned to the left. The members 22 and 22 may be brought into complementary or interlocking relationship by inserting an extremity of the body portion of one interlocking member into the grooves 40 and 40 formed by the projections or ears 36 and 38 of the other interlocking member.

In this interlocked relation, the chairs A and B are held in coupled or clamped relationship until the interlocking members 22 and 22 are disconnected by the manual release of the interengagement thereof, as may be easily accomplished by hand. It is to be added however that the interrelationship of the members 22 and 22 is such that they may not be readily disengaged as when one sits in one of the chairs or pushes either of the chairs from place to place.

In the descriptions of the modified forms of the invention which follow, it will be understood that same are variations of the species depicted in FIGS. 1 and 2, and that each will be mounted on the legs of chairs as described.

In FIG. 3 is illustrated a clamping means comprising interlocking members 122 and 124, each having opposed tail portions 128 and 130 and body or web portions 126 respectively. Transverse circular openings 132 and 134 extend through the tail portions 128 and 130 of each of the interlocking members 122 and 124. A longitudinally extending projection or ear 136 is spaced from and extends vertically from the upper planar edge of the body portion 126 of the interlocking member 122 and is bent in manner to be J shaped in cross section. The lower surface 135 of the projection 136 is curved downwardly from one extremity to the other in such manner that one side of the ear 136 extends below the bottom planar edge of the related body or web portion. A locking foot or dog 137 extends forwardly from the lowest portion of the leading edge of the ear or projection 136.

In operational practice, the interlocking member 122 is first disposed above the related interlocking member 124 and is then moved downwardly relative thereto in manner to cause the body or web 126 of member 124 to be received within the longitudinal groove 140 of member 122. Member 122 is then moved forwardly as to cause the downward projection 136 to abut the tail portion 128 of member 124. In this position, the foot or dog 137 is disposed below said tail portion 128 thereby preventing any upward movement of the locking member 122. It will be apparent that forward and reverse movement is blocked by the abutment of the projection 136 with the tail portions 128 and 130 of member 124.

The modification shown in FIG. 4 is identical to that of FIG. 3 with the exception that the lower edge 235 of the ear or projection 236 is parallel to the lower edge of the body or web 226 of locking member 222 and said projection 236 is not provided with the locking foot or dog.

In FIGS. 5 through 8 are illustrated equivalent locking devices having a stud or studs projecting outwardly from one of the interlocking members and being receivable within appropriately aligned slots or grooves in the complementary interlocking member.

In FIG. 5, a pair of studs 339 extend outwardly from the face of the body or web portion 326 of the interlocking member 322 and are receivable within an appropriately aligned longitudinally extending slot or groove 344 extending through the body portion 326 of the interlocking member 324. An enlarged opening 346 of appropriate size communicates with the slot or groove 344 to permit the insertion of the studs 339 of the pair so as to accomplish the desired interlocking function.

In FIG. 6, a single stud 439 is located centrally of the body or web portion 426 of the interlocking member 422 and extends outwardly therefrom. Said stud 439 is receivable within an opening 446 and groove 444 in the interlocking member 424. Said groove 444 is generally inclined and extends inwardly from the tail portion 430 to the point centrally of the body portion 426 of member 424 where it merges with the opening 446 which is offset from the longitudinal axis of said groove 444.

In FIG. 7 is shown an interlocking member 522 having a stud 539 extending outwardly from the body or web portion 526. Said stud is receivable through an opening 546 so as to be movable along a groove 544 in the body portion of the complementary locking member 524, the groove communicating with the opening.

In FIG. 8 is illustrated a clamping means wherein the interlocking members 622 and 624 are identical in size, shape and configuration. A stud 639 extends outwardly from the body or web portion of the member 622, said stud 639 being disposed adjacent the extremity of the groove 644 communicating with an opening 646 and being removable through said opening. Similarly, a stud 639' extends outwardly from the body or web portion of the member 624, said stud 639' being disposed adjacent the extremity of the groove 644' communicating with an opening 646' and being removable through said opening.

When members 622 and 624 are brought into face-to-face position, stud 639 of member 622 is receivable within the opening 646' of member 624, and stud 639' of member 624 is receivable within the opening 646 of member 624. Said studs 639 and 639' may be reciprocated within the slots 644' and 644 respectively of the members 624 and 626.

From the foregoing, it will be apparent that each modification of the clamping means described will secure a pair of chairs against lateral swinging movement as well as movement longitudinally of the chair legs and will insure that the chair legs are positively held secured in proper alignment relative to each other.

Stated otherwise, while each of modifications in clamps shown accomplishes the primary end of securing and clamping a bank of chairs, each is especially designed to provide desirable features not inherent in another. As for example, the foot 137 of the clamp of FIG. 3 affords added insurance against movement of the chairs, while the clamp of FIG. 4 would perhaps be more desirable for use when added speed in the coupling or uncoupling of chairs is required.

From the above, it will be seen that my invention contemplates the provision of a variety of simple and durable means for coupling a plurality of chairs together and par-
particularly for coupling chairs of the foldable type. The units may be attached to the chair with a minimum amount of effort and skill and these parts may be manufactured by practicing conventional shop methods. The chairs need not be specially constructed in order to be equipped with my improved device and my invention lends itself for use in connection with chairs of varied sizes and shapes. The described coupling elements are comparatively small in size and hence do not add any appreciable amount to the bulk of the chairs when coupled together.

Without further analysis, the foregoing is intended to so fully reveal the gist of my invention and its construction and operation that others can, by applying current knowledge, readily adapt it for various applications without omitting features which from the standpoint of prior art, fairly constitute essential characteristics of its generic and/or specific aspects. The substitution of equivalents and other changes, modifications and alterations as circumstances may suggest or render expedient, are contemplated since the invention is susceptible of such without departing from its real spirit or underlying principles. Stated otherwise, it is not desired to limit this invention to the exact construction shown and described as the objects hereof may be attained by the use of constructions different in certain respects from that disclosed.

The protection which is sought for this invention is covered by the language of the specification and the spirit represented thereby and same is limited only by the prior art and the scope of the appended claim.

What is claimed as new and useful is:

In a coupling means for the clamping together of a pair of adjacent foldable chairs comprising, generally horizontally-extending primary and secondary interlocking half-parts of identical configuration, said primary interlocking half-part being fixed to and extending between front and rear legs of one of said foldable chairs, said secondary interlocking half-part being fixed to and extending between front and rear legs of the other of said foldable chairs, said primary and secondary interlocking half-parts having interengaging means for interlocking with each other upon longitudinal movement of said half-parts relative to each other including a web portion on one of said half-parts and a projection on the other of said half-parts with the projection of the said other half-part being engageable with the web portion of the said one half-parts in interlocking engagement on longitudinal movement of said half-parts relative to each other.

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