

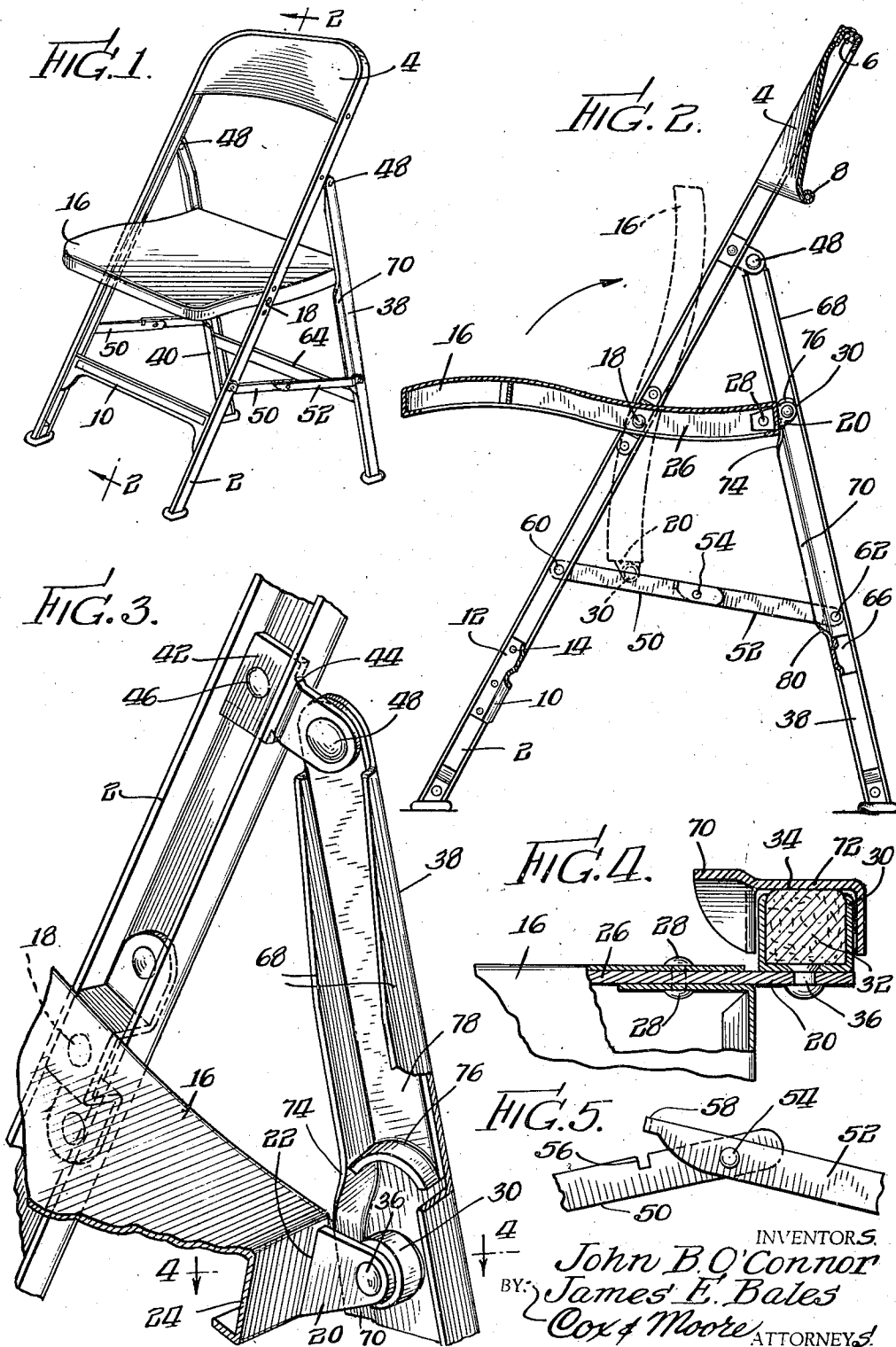
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COLLAPSIBLE CHAIR

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COLLAPSIBLE CHAIR

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This invention relates to folding or collapsible chairs.

Among the objects of the present invention are to provide a simple, economical, and sturdy folding chair constructed and arranged so that the seat is shiftable relative to the chair supports so that the seat may be either in position to support a person sitting in a chair or may be shifted to an out-of-the-way position to permit the occupant of the chair to stand and all accomplished without collapsing or folding the chair; to provide an all-metal chair consisting of foldable front and back leg members and a seat engaging said members and assembled at least to one of them, the seat being shiftable from a substantially horizontal position to permit an occupant to sit thereon or to be shifted to an upright or out-of-the-way position with respect to the occupant; to provide a collapsible chair comprising a main frame including front legs and a back supporting portion and a pair of rear legs pivotally connected thereto and adapted to collapse to be folded thereagainst in combination with a seat pivotally connected to the front frame member and adapted to shift to a substantially horizontal or open position to seat the occupant or to shift to a substantially vertical out-of-the-way position; to provide an all-metal folding chair comprising a main channel member forming front legs and a channeled back support member in combination with a pair of legs of substantially similar channel cross-section pivoted to said first-mentioned frame member and wherein a seat is pivotally connected to the back support member and is provided with stop means engaging a cooperative stop in the rear channel-shaped legs in such a manner that the seat is held firmly in substantially horizontal position, while at the same time the seat is permitted to swing into collapsed position with respect to the main frame member, substantially parallel thereto and likewise substantially parallel to the rear legs when the latter are collapsed into folding position; to provide a chair of the foregoing type wherein inter-connecting means is provided for holding the relatively pivoted legs in open position; to provide an all-metal chair wherein the main and rear leg members are formed of a similar type of channel-shaped iron and pivotally interconnected and wherein a seat is pivotally connected to the front channel sheet portion between the lateral walls forming the channel portion, and wherein the rear portions of the seat are provided with suitable members adapted to swing into engagement with stop members in

the channeled rear leg members, one of the lateral walls forming the channel of the rear leg members being bent outwardly to permit the passage of the stop means into such position that the chair seat is maintained in horizontal position to receive an occupant; to provide these and other objects of invention as will be apparent from a perusal of the following specification when taken in connection with the accompanying drawing, wherein:

Figure 1 is a perspective view of the improved chair;

Figure 2 is a sectional view taken on the line 2—2 of Figure 1;

Figure 3 is an enlarged perspective view of the chair seat stop and the manner in which it engages the cooperative stop formed in the channel-shaped rear legs;

Figure 4 is a sectional view taken on the line 4—4 of Figure 3; and

Figure 5 is a detailed view of the folding leg locking member.

Referring now to the drawing in detail, the chair, which is preferably an all-metal chair, comprises a main frame member 2, preferably of inverted U-shaped formation whereby to comprise a pair of front legs and a back supporting member. This frame member 2 is normally disposed, when the chair is open, in an upwardly inclined position as shown in Figures 1 and 2. It is formed with a U or channel shaped cross section, whereby to provide an interior space or recess capable of being utilized to house and mount various fittings such, for instance, as the sheet metal back 4 which is adapted snugly to fit in the upper frame portion as shown in Figure 2 and to be assembled therein by means of a bolt or screw 6. The lower portion of this back 4 is provided with a rolled or beaded edge 8 for strength and ornateness. It is preferably flared or concave, as shown in Figures 1 and 2. Any type of back may be used in connection with this channel-shaped frame member 2.

The frame member is provided with a lower cross support 10, the ends of which are provided with right-angled flanges 12, fitting within the channel recess of the channel-shaped frame 2 and suitably riveted in position as at 14. In addition, a sheet metal chair seat 16 of any desired construction is pivoted to the channel-shaped member as at 18. This chair seat may be of any desired construction. However, the type shown is covered by a pending application assigned to the same assignee to whom the present application is assigned. This chair seat 16 includes a

pair of rearwardly extending ears 20 which are adapted to pass through a slot 22 in a downwardly extending flange 24 of the seat, the inside portion 26 of each ear being riveted to the seat as at 28 (Figure 4), whereby the ear is formed as a substantially integral part of the seat. This ear 20 is provided with an outwardly extending stop or abutment 30, preferably formed as a hollow cylinder and adapted to contain a cylindrical fiber block 32, the outer end 34 of which may scrape against the inner wall of the rear channel leg as hereinafter described in order to deaden the sound. This cylindrical stop 30 is riveted as at 36 to lug 20.

The rear leg members 38 and 40 likewise comprise channel shaped sections which are preferably formed like the front leg member except that they are shorter. They are adapted to be pivotally connected to the front frame member by means of lugs 42, each passing through a slot 44 in the main frame member 2 and riveted or welded thereto as at 46. Each lug 42 pivotally engages one of the rear leg members 38 and 40 as at 48 whereby the rear legs and the front legs may be swung to an open position as shown in Figure 1 or may be swung to a folded position adjacent each other.

Means is provided for either holding the front and rear legs in open position or permitting them to collapse to adjacently folded position, preferably comprising the hinged metallic strips 50 and 52 pivoted together as at 54. The member 50 is provided with a locking slot 56 and the member 52 is provided with a locking tongue 58 which is adapted to engage the slot 56 to hold the front leg members firmly in open position. Each front strip 50 is pivoted as at 60 to one side of the main frame member 2 while the strips 52 are pivoted respectively as at 62 to the rear leg members 38 and 40.

The rear leg members are provided with a cross brace 64 of strip metal, which cross brace is provided with lateral flanges 66 inserted in the channel recess portion of the rear leg members 38 and 40 and welded or riveted thereto.

An extremely simple construction for these rear leg members is provided which will permit the chair seat to be maintained sturdily in open position to permit an occupant to be seated in the chair or which will permit the seat to swing to a position shown in dotted lines in Figure 2, wherein the seat is wholly disengaged from the rear leg members. The means that is provided in carrying out this function consists in bending the front lateral flange 68 of each rear leg substantially midway of its length substantially 90 degrees so as to provide an outwardly flaring portion or lip 70 which likewise is substantially parallel to the outer wall portion 72 of each rear leg (see Figure 4). Inasmuch as only a portion of this flange 68 is bent outwardly, as hereinbefore described, there is provided a shoulder 74 which cooperates with the channel shape of the remainder of the upper portion of each leg which provides a lock groove as hereinafter explained. Cooperating with this groove there is provided a stop member 76 herein shown arcuate or concave in formation. The stop member is preferably formed as a flange on the lower end of a metallic strip 78 which is inserted in the channel of each leg portion and welded in place. A similar shoulder 80 is formed on the lower portion of each rear leg just below the outwardly flaring lip 70, which facilitates the assembly of the cross

brace 64 into the lower channel portion of the rear legs 38 and 40.

When the chair is in open position, it will be seen that the cylinder lock 30 of the seat is adapted to swing across the outwardly bent lip 70 so that the stop 30 may enter the channel behind the upper portion of the forward flange 68 locking behind the shoulder 74 and moving inwardly until it engages the stop member 76. Since there are two stops to cooperate with the opposed locks 30, one on each rear corner of the seat, when the stop members are in the position shown in Figure 2, the seat will be held rigidly and firmly in horizontal open position. When necessary, the occupant of the seat by standing may lift the front of the seat upwardly, whereupon the seat will pivot at 18 to the dotted line position. When this happens, the lock 30 will swing downwardly arcuately out of its slot and pass over the lip 70 to a position wholly detached and independent from the rear leg members. In completely folded position, the rear leg members 38 will lie substantially parallel to the front leg members 12 and the seat 16 will lie parallel to the frame member 2.

It will thus be seen that there is provided a very simple, sturdy, and economical type of folding chair, the arrangement being such that shifting of the seat permits the chair to be folded but does not necessarily result in folding of the entire chair. That is to say, while disposition of the seat in normal operative position positively locks the legs in position in use, movement of the seat from open position can be accomplished without necessarily collapsing or folding the unit. This arrangement accordingly permits the occupant of one chair to stand, raise the seat, and step back to permit more space for another person to pass in front of the chair, and to likewise permit the seat to be lifted without folding the chair.

The invention is hereby claimed as follows:

1. A folding chair comprising a unitary substantially U-shaped frame of channel-shaped cross section providing a back support and front legs, a pair of rear legs having channels, said legs being pivoted to said frame member and adapted to be folded to position adjacent said frame member or to open position with respect thereto, stop means disposed within the channels of said rear legs, means to maintain said pairs of legs in open position, a seat pivotally connected to said frame member and having a pair of stops on the rearmost portion of said seat, each rear leg having an open portion adjacent the channel to permit a stop to swing inwardly of and locate within such channeled portion of said rear leg and to contact the stop means therein while permitting said stop to swing clear of and independently of said rear leg whereby to permit said seat to tilt or swing upwardly.

2. A chair comprising a channel-shaped metal frame member including a back supporting portion and front legs, a pair of channel-shaped metal rear legs pivotally connected to said frame member, an intermediate portion of one of the flanges of the channel of each rear leg being bent out of the plane of said flange, a seat pivotally mounted on said frame member, said seat having opposed stop members, each stop member being adapted to swing across the outwardly bent portion of a rear channel-shaped leg and into the channel of said rear leg, transverse stops disposed in the channels of the rear legs to be engaged

by said seat stops and means to maintain the legs in predetermined spread apart position.

3. A folding chair comprising a channel-shaped frame member including a back supporting portion and front legs, a pair of channel-shaped rear leg members pivotally connected to said frame member, an intermediate portion of one of the flanges of the channel of each rear leg being bent out of the plane of said flange, a seat pivotally mounted on said frame member, said seat having opposed stop members, each stop member being adapted to swing across the outwardly bent portion of a rear channel-shaped member and into the channel of said rear member, a transverse stop disposed in the channel of the rear member to be engaged by said seat stop, and hinged members engaging the front and rear legs and in one position adapted to hold the same firmly in spread apart position, said hinged members being collapsible to permit said legs and said seat to fold into relatively flat position.

4. A folding chair having a pair of front legs and a back frame, a pair of rear legs pivotally connected to said first-mentioned frame, each of said rear legs being formed of channelled metal, the openings of the channels of said rear legs facing each other, and the forward lateral flange of each rear leg for a length substantially centrally of the leg being bent forwardly somewhat into the plane of the outer face of the leg portion whereby to provide a locking shoulder with a flange thereabove, a stop member inserted in the channel above said shoulder and extending transversely across the channel-shaped member, a seat pivoted to the front leg member, said seat having a rearwardly extending rigid extension carrying a stop member whereby upon pivotal movement of said seat said second stop member is adapted to swing across the forwardly bent portion of the channel-shaped member to lodge behind the shoulder and against the transverse stop of said rear leg member whereby to hold said seat in open position.

5. A folding chair having a pair of front legs and a back frame, a pair of rear legs pivotally connected to said first-mentioned frame, each of said rear legs being formed of a metallic channel-shaped strip, the openings of the channels of said rear legs facing each other, and the forward lateral flange of each rear leg for a length substantially centrally of the leg being bent forwardly somewhat into the plane of the outer face of the leg portion whereby to provide a locking shoulder with the flange thereabove, a metallic stop member inserted in the channel above said shoulder and extending transversely across the channel-shaped member, a seat pivoted to the front leg member, said seat having a rearwardly extending rigid piece carrying a stop member whereby upon pivotal movement of said seat said stop member is adapted to swing across the forwardly bent portion of the channel-shaped member to lodge behind the shoulder and against the said transverse stop of said rear leg member whereby to hold said seat in open position, said seat stop comprising a cylindrical lug carrying a non-metallic sound deadening element.

6. A folding chair comprising a main frame comprising front legs and a back frame, a back mounted in the top of said main frame, a seat pivotally mounted substantially midway of said main frame, a pair of spaced rear legs mounted

to opposite portions of said main frame, each of said rear legs comprising a single channelled metallic member, a portion of the channelled rear leg members being bent substantially 90 degrees forwardly to open position to provide an upper shoulder, a strip of metal inserted in the upper portion of each of said channel-shaped legs above said open bend and each strip having a transversely extending flange providing a horizontal stop immediately above said shoulder, a cross brace for said rear leg members having opposed lateral flanges each inserted in the channelled portion of a rear leg member below said forwardly bent portion, means for securing said cross brace in said channel-shaped portions, said seat having a pair of longitudinally extending parallel arranged lugs, a lateral and outwardly extending stop member mounted on each of said lugs and adapted to swing across said outwardly bent portion of one of said rear leg members into the channelled portion of said member behind said shoulder to engage the transversely extending flange constituting said stop whereby to hold said seat in open position, said forwardly bent portions of the channel-shaped members permitting said seat stops to swing downwardly and out of complete engagement with said rear legs whereby said seat may swing to a position substantially parallel with said combined front leg and back frame, and means for permitting said front and rear leg members to collapse into adjacent position and alternatively to hold said front and rear leg members in open position.

7. A chair comprising a pair of front legs and a back frame, a pair of channel-shaped rear legs pivotally connected to said frame and having channel portions opening inwardly, a flange of each channel-shaped leg being reduced for a portion intermediate of its length, a seat pivotally mounted on said frame, said seat having stop members adapted to swing transversely through said reduced portions of the channel members when the seat is pivotally moved to an open generally horizontal position and being receivable within the channel portion of the rear legs, stop means associated with said channel portions of the rear legs and engageable by said seat stops and means to maintain the legs in predetermined spread apart position.

8. A chair comprising a pair of front legs and a back frame, a pair of channel-shaped rear legs pivotally connected to said frame and having channel portions opening inwardly, a flange of each channel-shaped leg being reduced for a portion intermediate of its length, a seat pivotally mounted on said frame, said seat having stop members adapted to swing transversely through said reduced portions of the channel members when the seat is pivotally moved to an open generally horizontal position and being receivable within the channel portion of the rear legs, stop means associated with said channel portions of the rear legs and engageable by said seat stops, said seat stops comprising a surface of sound deadening material facing outwardly and disposed for engagement with an inner surface of the channel shaped section when the seat is in open position and means for maintaining the legs in predetermined spread apart position.

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