

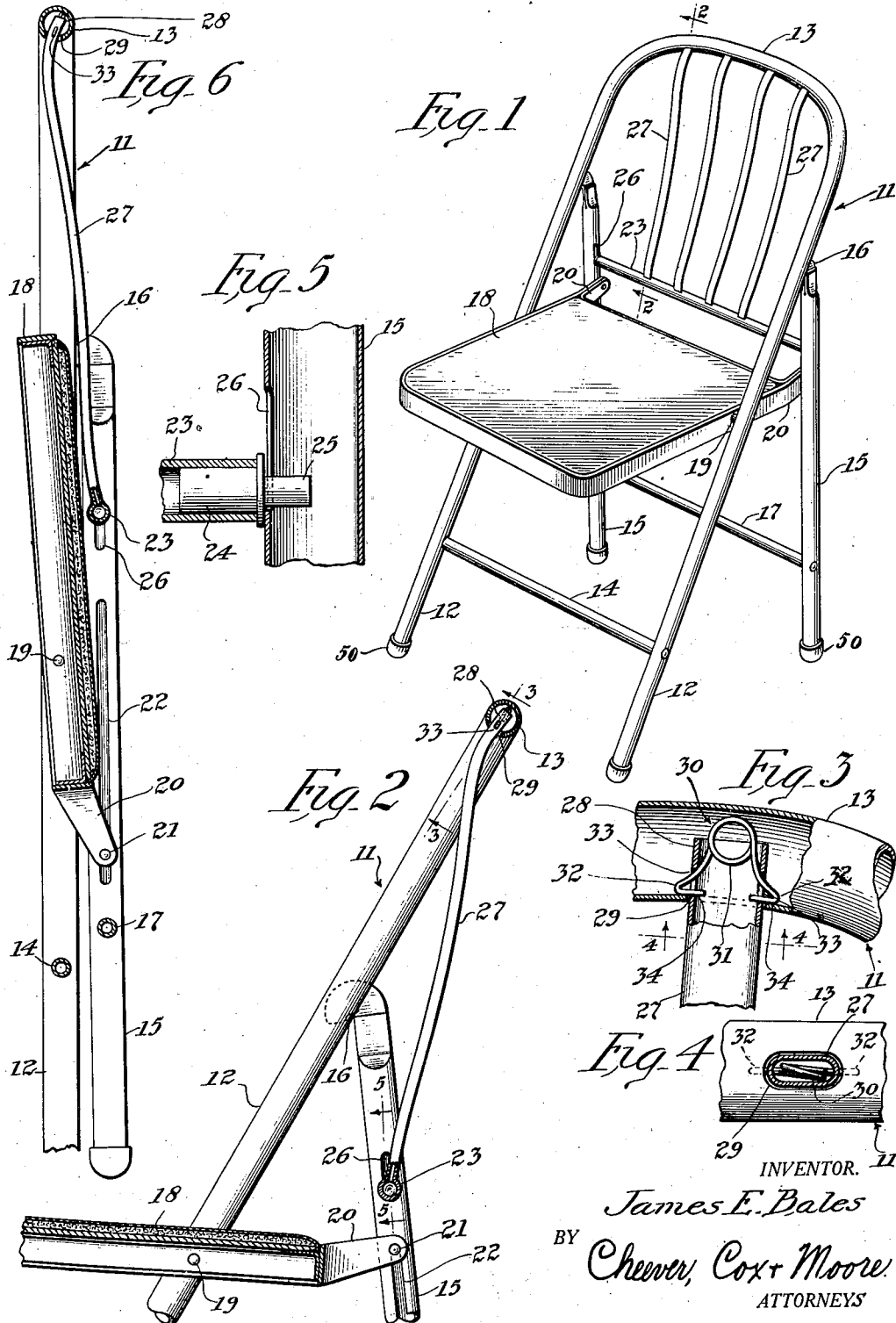
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FOLDING CHAIR

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FOLDING CHAIR

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This invention relates to folding chairs, and is a division of application, Serial No. 384,583, filed concurrently herewith.

The primary object of the invention is to provide a metal folding chair, which has a back rest of substantial proportions, and which is provided with means for permitting mobility of the back rest to allow the chair to be folded into a very compact structure and substantially into the normal plane of the chair main frame.

Another object is to provide a chair having a main frame, to which rear legs are pivotally connected, and which has a back rest operatively connected to the rear legs and to the main frame to permit relative movement of the back rest for folding the chair into limited proportions.

Another object is to provide a chair having a back rest of substantial proportions, which is operatively connected to the chair, whereby the back rest will be in substantially the normal plane of the chair frame when the chair is in folded position.

Another object is to provide a chair having a back rest which comprises vertical back slats or rails fastened to a cross member, the upper ends of the slats or rails having pivotal engagement with the chair frame and the cross member having slidable movement relative to certain of the chair legs.

A further object is to provide a back rest for folding chairs, which has its slats or rails inserted in slots or openings provided in the main frame, and which is provided with means for flexibly holding the rails or slats in proper operative position.

A still further object is to provide a back rest for chairs, which has its slats or rails extending through openings in a part of the chair, spring means being arranged in the ends of the slats or rails to permit the slats to be readily inserted in position, but preventing removal thereof.

Other objects and advantages will hereinafter appear.

The invention comprises in general a folding chair having a tubular main frame. Rear legs are pivoted to the main frame, and a seat is pivoted to the main frame and has sliding

engagement with the rear legs to permit the rear legs and the seat to be folded in substantially the normal plane of the main frame. A back rest comprising vertical slats or rails is connected to a cross bar which has sliding movement with the rear legs. The upper ends of the slats extend through openings in the main frame, and spring members are provided in the upper ends of these slats for pivotally holding the slats in position relative to the main frame. The springs have portions thereof extending through slots in the ends of the slats and permit the slats to be readily inserted in position by pressing the extending ends of the springs inwardly. When the slats are in position, the ends of the springs project through the slots in the slats and engage the inside of the main frame about the slots in the main frame. The slats are, therefore, readily insertable, but cannot be withdrawn. The back rest is of substantial proportions and may be curved to fit the contour of the body. The back rest is of substantially fixed or rigid construction, so that it may be formed to provide a substantially rigid support to the back of the sitter, and so by its pivotal connection to the relatively shiftable chair parts will permit the inter-folding of all these parts without distorting the fixed or predetermined shape of the members forming the back rest. When the chair is collapsed, the pivotal connection of the back rest with the main frame and the sliding movement with the rear legs permit the back to lie in the normal plane of the chair frame when the chair is folded.

The accompanying drawings illustrate a selected embodiment of the invention, and the views therein are as follows:

Fig. 1 is a detail perspective view of the improved chair in extended position.

Fig. 2 is a detail sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a detail sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a detail sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a detail sectional view on the line 5—5 of Fig. 2.

Fig. 6 is a detail longitudinal sectional

view of the chair in folded or collapsed position.

The folding chair illustrating the present invention comprises a main frame 11 formed of a tubular member which is bent substantially in the shape of an inverted U, the sides of the U providing chair legs 12 and the intermediate or connecting portion 13 providing a back support. The legs 12 are connected together near their lower ends by means of a tubular rod or rung 14. Rear legs 15 which may be formed of tubular material are pivoted to the frame member at 16, and may be connected together by means of a rung 17 also made of tubular material. A seat 18, pivotally connected to the main frame 11 at 19, has rearwardly extending arms 20 which carry pins 21. These pins have sliding engagement with a slot 22 formed in each of the rear legs to permit the seat to be folded when the chair is in the collapsed or folded position shown in Fig. 6.

A tubular cross member 23 has fittings 24 secured to its ends, and pins 25, Fig. 5, on the fittings engage and have sliding engagement with oppositely aligned slots 26 which are formed in the rear legs 15. Back slats or rails 27 have their lower ends connected to the cross member 23, and their upper ends 28, Fig. 3, extending through slots 29 formed in the portion 13 of the main frame. The slats or rails 27 are slightly less in cross-sectional area than the holes or slots 29, thereby permitting the slats or rails to have free or pivotal movement relative to the portion 13 of the frame. In other words, the periphery of the slats is less than the circumference or periphery of the holes 29 to permit pivotal movement of the slats and the back rest during folding and unfolding of the chair. A spring 30, Fig. 3, having a coiled portion 31 has its free ends bent to provide clips 32 which project through slots 33 formed in the upper ends 28 of the slats or rails 27. The springs 30 are arranged in the slats and then the upper ends of the slats are inserted in the slots or openings 33 in the main frame member. The bent ends of the spring which form the clips 32 are rounded or tapered at their upper ends to allow them to spring inwardly when the members 27 are placed in position. The lower ends of these clips are substantially straight to form shoulders 34 which spring outwardly and engage the inside of the frame at the sides of the slots when the members 27 are in place. These clips also prevent the members 27 from being withdrawn from the slots 33. The spring 30 is substantially as long as the diameter of the tubular frame and just touches the inside of the frame at its top and bottom edges to prevent the members 27 from rattling. The manner in which the slats or rails 27 are supported in the main frame securely keeps the rails in locked position and provides a pivotal

connection between the rails and the frame. The cross members 23 and the slats 27, which are curved to conform with the contour of the body, provide a back rest of substantial proportion for the chair.

Rubber feet 50 may be inserted in the bottom of the tubular legs 12 and 15, if desired.

The construction of the back rest is clearly shown and described in the aforesaid co-pending application, of which this is a division, but the specific construction of the back rest is claimed only in the present application.

The invention provides a chair which is rigid and durable, and which has a comfortable back rest of substantial proportions. The particular manner in which the back rails or slats are pivoted to the frame, and the method in which the cross rail slidably engages the rear legs provide sufficient movement to the back rest to permit the chair to be collapsed or folded in a relatively small space and to lie substantially in a plane normal to the main frame.

By forming the back rest of independent members 27, preferably of tubular nature, a very simple and economical construction is provided, and which also permits of the separate conformation of each back member 27 whereby to provide various shapes of back supports. In providing a back rest of substantially rigid or fixed shape such as the members 27, it has been thought advisable to include means for shiftably connecting these back members to the frame 13 and to the rear frame members 15 so as to permit the folding of these chair parts, and this has been carried out in a particularly simple way in the present invention by forming the back members of separate tubes or pieces and making them separate and independently positioned at the top and at the bottom to the frame 13 and to the side legs 15.

Changes may be made in the form, construction and arrangement of the parts without departing from the spirit of the invention or sacrificing any of the advantages thereof, and the right is hereby reserved to make all such changes as fairly fall within the scope of the following claims:

1. In a folding chair, the combination with a main frame member providing feet and providing an upstanding back supporting frame, said main frame member being of tubular construction and having openings therein, a second frame member pivotally connected to the main frame member for providing additional feet, and a seat pivotally interconnecting the main frame and the second frame member, and a back rest for the main frame, including tubular members each having a portion of smaller cross-section than the main frame member and the corresponding opening and permanently inserted in one of said holes, the inserted end

of said tubular member having registering spaced-apart apertures, and a spring clip having a bowed portion and two resilient legs for pivotally and permanently uniting the tubular member in its opening in the main frame member, the bowed portion contacting the inner wall of the tubular member and the resilient legs extending outwardly through the opposed openings in the end of the tubular member and overlying the interior marginal edges of the hole in the main frame member whereby to hold the two members in permanent pivotal relation while preventing the rattling of the members due to their loose pivotal connection.

2. In a folding chair having certain portions of tubular construction, a loose pivotal connection between two of said tubular members comprising a hole formed in one of said tubular members, the other of said tubular members forming the connection being of less cross-section than the cross-section of the hole and being inserted in said hole, and locking means independent of each of said members and inserted and enclosed in said members for pivotally interconnecting said members, said means preventing rattling of the parts thus pivotally interconnected.

In witness whereof, I have hereunto subscribed my name.

JAMES E. BALES.