Jan. 16, 1951 H. R. WILKINSON, JR 2,538,637

FOLDING CHAIR

Filed Feb. 16, 1949 2 Sheets-Sheet 1

Fig. 1

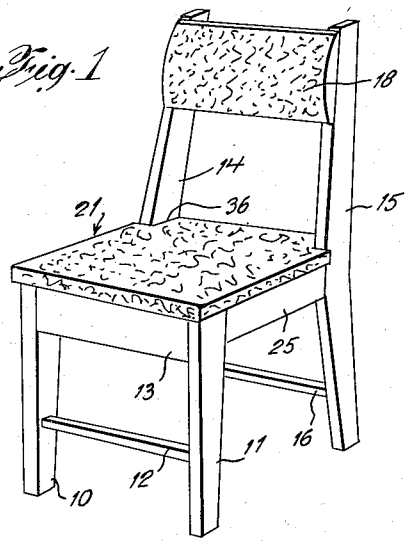


Fig. 2

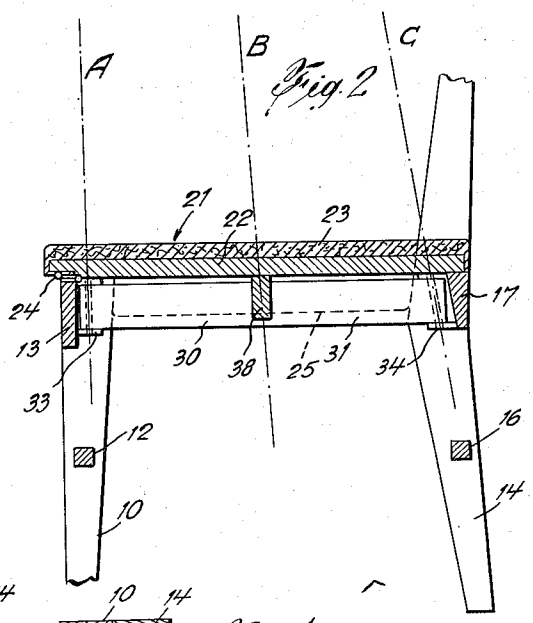


Fig. 3

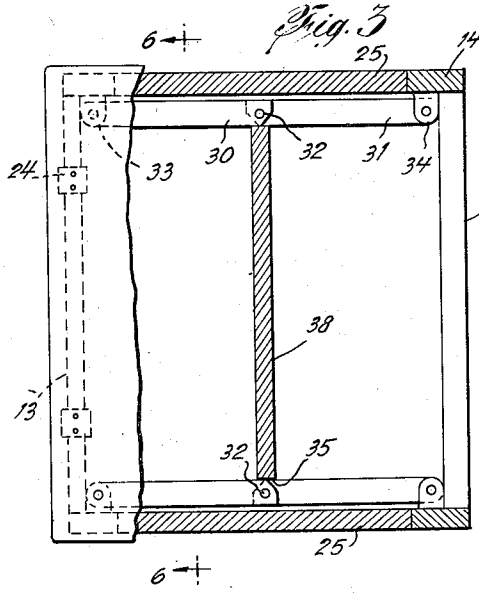


Fig. 4

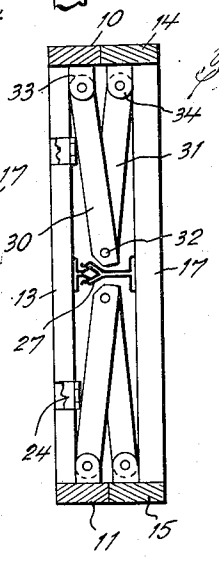


Fig. 5

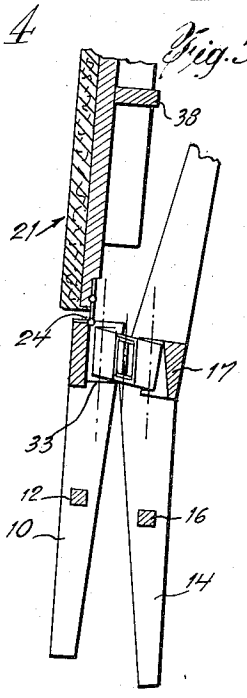
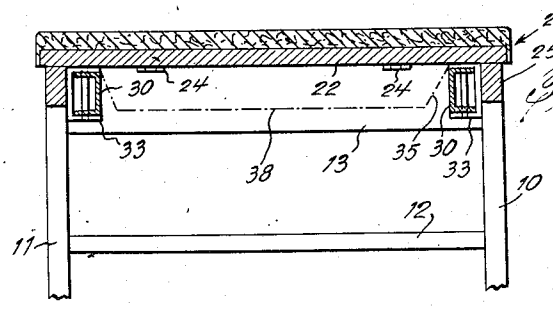


Fig. 6



INVENTOR.

Harry R. Wilkinson Jr

BY

John P. Chandler

his ATTORNEY

Jan. 16, 1951 H. R. WILKINSON, JR 2,538,637

FOLDING CHAIR

Filed Feb. 16, 1949 2 Sheets-Sheet 2

Fig. 7

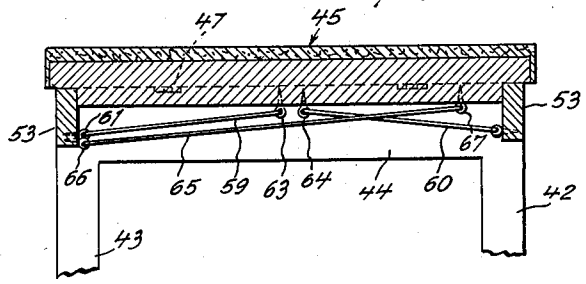
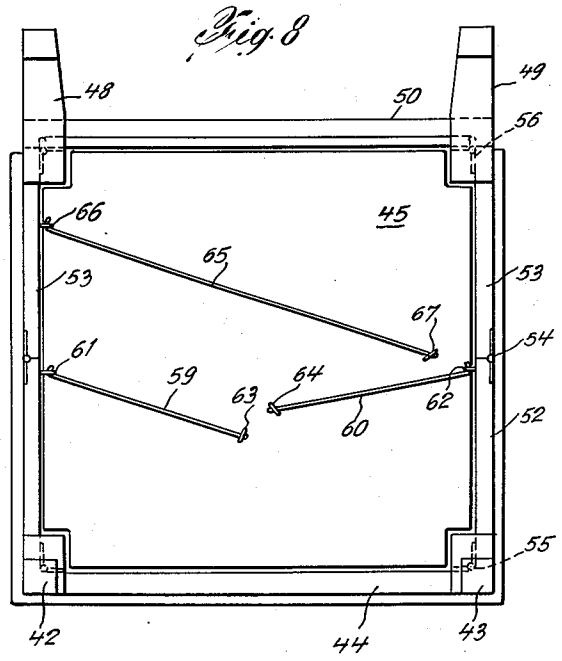


Fig. 8



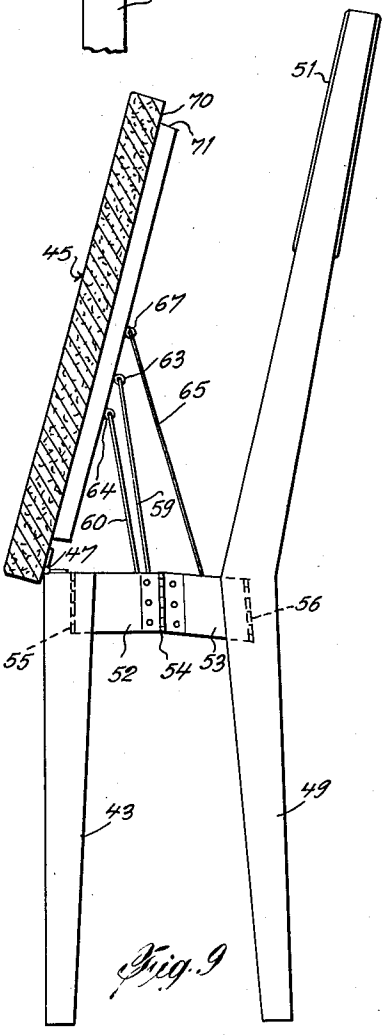


Fig. 9

INVENTOR.
Harry R. Wilkinson Jr.
BY
John P. Chandler
his ATTORNEY

Patented Jan. 16, 1951 2,538,637

UNITED STATES PATENT OFFICE

2,538,637

FOLDING CHAIR

Harry R. Wilkinson, Jr., New York, N. Y.

Application February 16, 1949, Serial No. 76,779

5 Claims. (Cl. 155—141)

1

This invention relates to articles of furniture and relates more particularly to a novel folding chair which, when set up for use, has the same appearance as any conventional type of rigid chair.

An important object of the invention is to provide an improved folding chair which will retain a high measure of rigidity, when in set-up condition, during its entire period of usefulness.

Another object of the invention is to provide in a folding chair a novel interlocking arrangement of parts to give stability to the chair when in open position and which also permits the chair to be instantly folded when not in use and to occupy a minimum amount of space.

The usual rigid chair of the dining room type is provided with rails extending between the legs at their upper ends. In accordance with the present invention these two rails along opposed sides of the chair are each formed in two sections, hinged together at their centers and which are arranged to move inwardly to folded position while the seat, pivoted along its forward edge to the front rail, is swung upwardly and is arranged to overlie the seat back when in folded position.

In the drawing:

Fig. 1 is a perspective view of a folding chair embodying the present invention.

Fig. 2 is a broken central vertical section thereof.

Fig. 3 is a plan view of the seat section of the chair partially in section.

Fig. 4 is a horizontal section of the lower portion of the chair in folded position.

Fig. 5 is a broken vertical section of the chair in folded position.

Fig. 6 is a broken section taken on line 6—6 of Fig. 3.

Fig. 7 is a broken vertical section of a modified form of chair.

Fig. 8 is a bottom plan view of the modified chair in open position.

Fig. 9 is a side elevation of the chair in partially folded position.

The chair constituting the first embodiment of the present invention is illustrated in Figs. 1 to 6, inclusive. It comprises a front assembly and a rear assembly which are joined together and arranged to move from open to closed position. The front assembly includes front legs 10 and 11 connected at their lower ends by a rung 12 and at their upper ends by a seat supporting rail 13. The rear assembly includes rear legs 14 and 15 connected at their lower ends by a rung

2

16, intermediate their ends by a seat supporting rail 17, and at their upper ends by a cushioned back rest 18.

The seat 21 comprises a base member 22 and a cushion element 23, the base being hinged at 24 on front rail 13. The base is reinforced by side rails 25. It was earlier pointed out that the side, seat-supporting rails were formed in two parts and hinged together at their centers which is the specific construction of the second embodiment of the invention. In the first embodiment, however, there are provided side seat supporting rails 25 which are secured to the seat and also the supplemental seat supporting rails which are formed in two parts 30 and 31 which are hinged together at 32 and at their other ends they are hinged on brackets 33 and 34 secured to the front and rear legs respectively. These rails are of channel shape and the hinge 32 is of such construction as to limit outward movement of the parts to the straight line position of Fig. 3. The lower surface of the seat is further provided with a transverse support 38 which in Fig. 6 is shown in broken lines for the reason that this support lies to the rear of the section lines in Fig. 3. Its showing in Fig. 6 is made for the purpose of illustrating the contour of the opposed ends of the support which are diagonally inclined as shown at 35 for the purpose of moving the two part side rails 30—31 to straight line position when the seat is being moved from folded to open position.

When the seat is in its fully open position as shown in Figs. 1, 2, 3 and 6, the seat rests on rear rail 17 and on the two part hinged side rails 30—31. The seat has rear corner notches 36 to clear rear legs 14 and 15 when in this position. It will also be apparent from an examination of Fig. 3 that transverse support 38 retains the hinged rails 30—31 in straight line position by contact of its ends 36 with these members adjacent the hinge point 32. The notched corner sections 36 of the seat firmly engage the rear legs and the whole structure is thus well braced and sturdy.

When it is desired to fold the chair the seat is raised to vertical position and the raised seat then moved laterally of the back assembly which tends to cause the hinged rails 30—31 to break from their straight-line position and move towards the collapsed position of Fig. 4. This operation should be performed while the chair is tilted rearwardly and is standing on its back legs. The seat is then moved rearwardly, carrying with it the front assembly and when front

meets back the chair is fully folded, the two-pivot hinge 24 aiding in this folding action. A latch 27 may be employed for holding the front and rear sections to folded position, as shown in Fig. 4. The axes of hinge elements 32, 33 and 34 are shown by broken lines. The lower sections of the rear legs are inclined somewhat forwardly at their upper ends and in order to cause the front and back legs to be generally parallel when in folded position the axes of the hinge elements 32, 33 and 34, when in open position are not parallel but rather have the relation indicated by broken lines A, B and C in Fig. 2. Thus, when in folded position they are generally parallel as shown in Fig. 5.

To open the chair the front rail 13 is grasped by the hand and the front assembly moved forwardly, also while the chair is resting on its back legs, thus causing the rails 30—31 to move in the direction of their straight-line position. When this position has almost been reached the seat is swung downwardly and the diagonal terminals 35 of support 38 moves the parts 30—31 to their straight line position. These diagonal terminals also prevent the chair from collapsing while it is in use. If the seat is constructed as a metal or wood frame the cushion element may extend downwardly between the two-part side rails and if desired the seat may be hinged on the back assembly rather than the front.

In the modified structure of Figs. 7, 8 and 9 the fixed side rails 25 are omitted. The front assembly includes front legs 42 and 43, upper connecting rail 44 and the cushioned seat 45 hinged to the rail at 47. The rear assembly includes rear legs 48 and 49 connected by seat supporting rail 50 and by back rest 51.

Each side rail in this instance comprises parts 52 and 53 connected by hinge 54 and connected at opposite ends to the front and rear assemblies by hinges 55 and 56, respectively.

Relatively short links 59 and 60 are pivotally connected at one end thereof to the side rails 52—53 at 61 and 62 adjacent the point of the central hinge 54. At their opposite ends they are pivotally connected at 63 and 64 to the bottom of the seat. A somewhat longer link 65 is connected at 66 to one of the rear wall parts 53 and at its other end to the seat at 67. It will be noted that the seat has a recess 70 extending around its sides which forms a shoulder 71 which is engaged by the side rails and by the front and back rails. The parts are in the position of Figs. 7 and 8 when the chair is open and ready for use. The seat is supported by all four side rails. To fold the chair the seat is raised as in Fig. 9 and the several links draw the two-part side rails inwardly to folded position.

The chairs of both embodiments are shown as having seats of substantially the same width in the back as in the front. If desired, however, the back can be more narrow than the front and in such cases the rear rail section 31 will be slightly shorter than the front rail.

It will be seen from the foregoing that I have provided a novel chair which can be folded to small dimensions and which eliminates the "folding chair" appearance since when it is set up for use there is no external evidence of hinges, braces, links or the like. Even when the chair is folded, the hinges are not visible. All metal-to-wood hinges of the prior art convention-hall type of folding chairs have been eliminated. Also, the chair may be constructed in any style or period without materially changing the mechanical structure.

While two forms or embodiments of the invention have been shown and described herein for illustrative purposes, and the construction and arrangement incidental to specific applications thereof have been disclosed and discussed in detail, it is to be understood that the invention is limited neither to the mere details or relative arrangement of parts, nor to its specific embodiments shown herein, but that extensive deviations from the illustrated forms or embodiments of the invention may be made without departing from the principles thereof.

What I claim is:

1. A folding chair comprising an interconnected front and rear assembly and a hinged seat carried by the front assembly, such front assembly including spaced legs and a seat-supporting rail connecting the legs at their upper ends, the rear assembly including spaced legs, a seat-supporting rail connecting such legs and a back rest connecting the upper sections of such legs, a two-part seat supporting rail on each side of the chair and arranged to underlie an edge of the seat when in open position, each such rail being hinged together adjacent its center and being hinged at opposite ends thereof to the front and rear assemblies, respectively, and arranged to swing inwardly when the chair is folded and shoulders formed on opposite sides of the lower surface of the seat limiting inward movement of the two-part rails when the seat is in lowered position.

2. A folding chair comprising an interconnected front and rear assembly and a seat carried by the front assembly, such front assembly including spaced legs and a seat-supporting rail connecting the legs at their upper ends and hinged means connecting the seat with said rail, the rear assembly including spaced legs of greater length than the front legs, a seat supporting rail connecting the legs and a back rest connecting the upper sections of such legs, a two-part seat supporting rail on each side of the chair, each such rail being hinged together adjacent its center and being hinged at opposite ends to the front and rear legs, respectively, on each side of the chair and arranged to swing inwardly when the chair is folded, a transverse support on the lower surface of the seat and provided with diagonally inclined terminals engage the hinged rails during downward movement of the seat and move them outwardly to a straight-line position.

3. A folding chair comprising an interconnected front and rear assembly and a hinged seat carried by one of the assemblies, such front assembly including legs and a seat supporting rail connecting the legs at their upper ends, the rear assembly including legs extending to a greater height than the front legs, a seat-supporting rail connecting the legs and a back rest connecting the upper sections of such legs, a two-part seat supporting rail on each side of the chair, each such rail being hinged together at its center and being hinged at opposite ends to the front and rear assemblies respectively, and arranged to swing inwardly when the chair is folded, a transverse support on the lower surface of the seat whose terminals engage the hinged rails and retain them in generally straight-line position when the chair is open.

4. A folding chair comprising an interconnected front and rear assembly and a hinged seat carried by the front assembly, such front assembly

including spaced legs and a seat-supporting rail connecting the legs at their upper ends, the rear assembly including spaced legs, a seat-supporting rail connecting such legs and a back rest connecting the upper sections of such legs, a two-part seat supporting rail on each side of the chair, each such rail being hinged together adjacent its center and being hinged at opposite ends thereof to the front and rear assemblies, respectively, and arranged to swing inwardly when the chair is folded, links connecting the side rails with the seat so as to cause the side rails to move inwardly to folded position as the seat is raised.

5. A folding chair comprising an interconnected front and rear assembly and a hinged seat carried by the front assembly, such front assembly including legs and a seat-supporting rail connecting such legs at their upper ends, the rear assembly including legs extending to a greater height than the front legs, a seat supporting rail connecting such legs and a back rest connecting the upper sections of such legs, a two-part seat supporting rail on each side of the chair and arranged to underlie the edge of the seat in generally straight-line position when the chair is open, each such rail being hinged together adjacent its center and being hinged at opposite ends thereof to the front and rear assemblies, respectively, and arranged to swing inwardly when the chair is folded, links pivotally connected at one end thereof to the said side rails near their intermediate hinge points and at their opposite ends to the seat so as to cause the side rails to move inwardly to folded position as the seat is raised and to retain the side rails in their straight-line relation when the chair is open.

HARRY R. WILKINSON, JR.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
214,174	Morse	Apr. 8, 1879
1,428,627	Grabfelder	Sept. 12, 1922

FOREIGN PATENTS

Number	Country	Date
280,054	Italy	Nov. 29, 1930
821,142	France	Aug. 17, 1937