Aug. 13, 1940. M. K. ORTON 2,211,289

FOLDING CHAIR

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Fig. 1

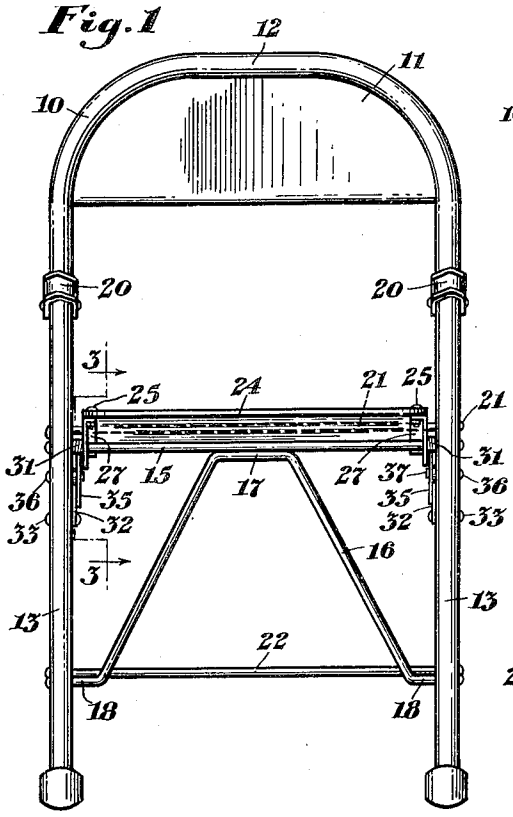


Fig. 2

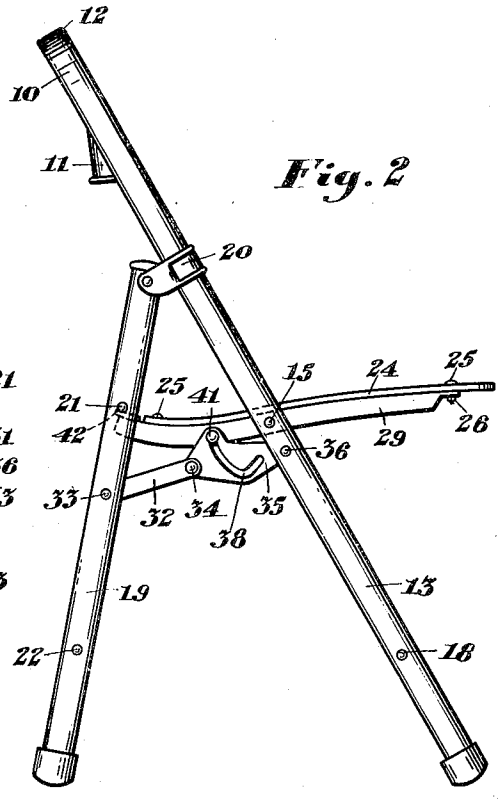
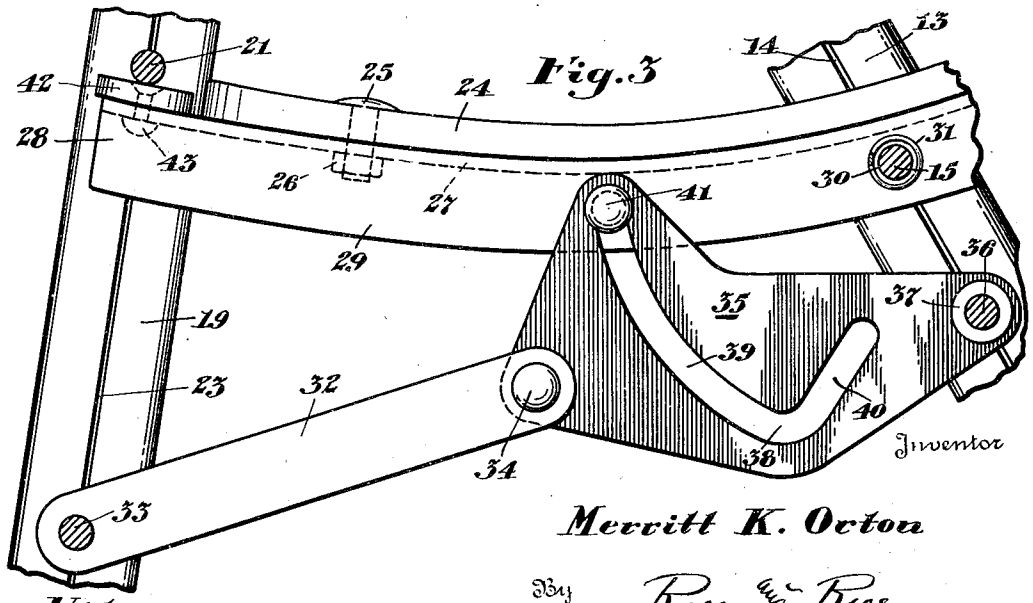


Fig. 3



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Fig. 5

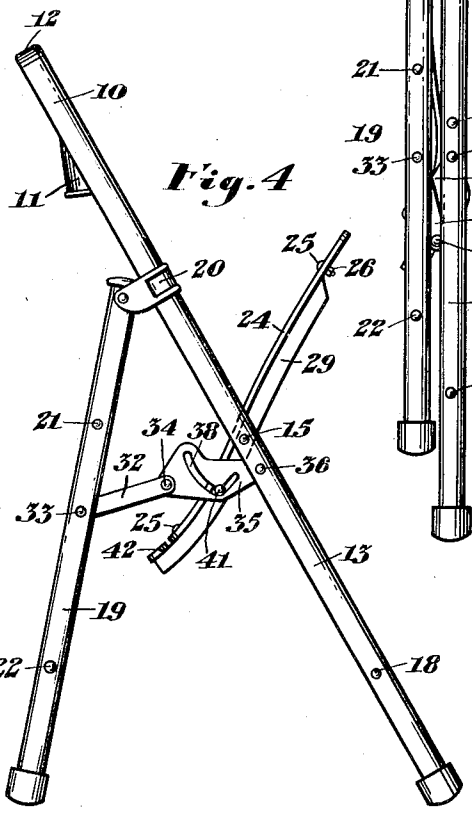
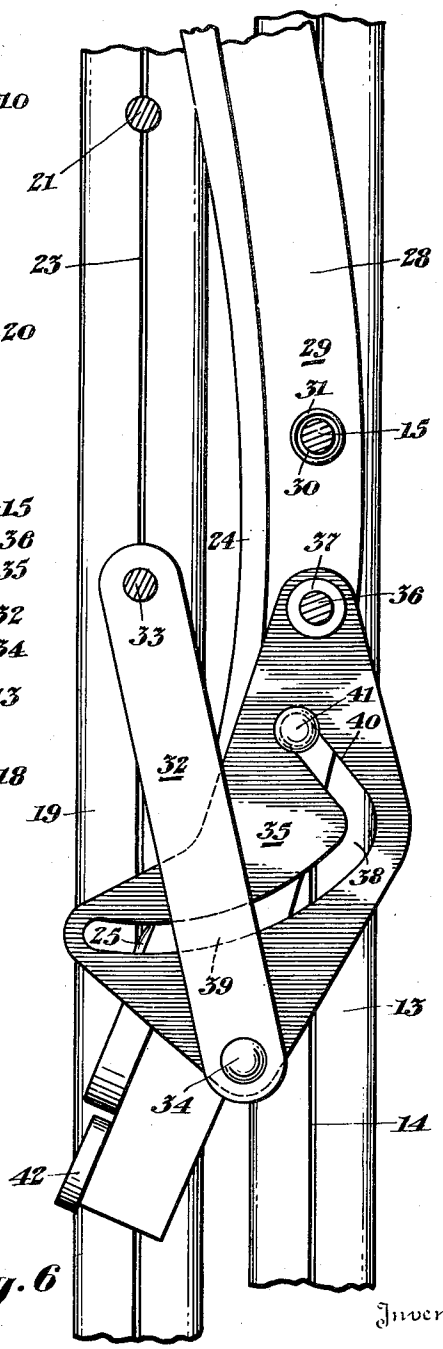


Fig. 4

Fig. 6



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2,211,289

UNITED STATES PATENT OFFICE

2,211,289

FOLDING CHAIR

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Application June 28, 1939, Serial No. 281,588

2 Claims. (Cl. 155—142)

The present invention relates to folding chairs, and more particularly to folding chairs of sheet metal construction of the general character illustrated and described in United States Letters Patent No. 1,939,596, issued December 12, 1933, on application filed March 29, 1933, by Ralph K. Merrill and by him assigned to my assignee.

The primary objects of the instant invention are to provide a chair of the general character above set forth which is rugged and sturdy in construction; to provide such a chair whose seat may be turned upwardly, independently of the folding of the chair supporting legs, a sufficient distance to permit the occupant thereof to rise in order that others persons may pass in front of him; to provide such a chair whose seat in its farther upwardly folding movement effects a folding movement of the chair supporting legs; to provide such a chair whose legs may be completely unfolded by the mere lowering of the seat thereof; and, to provide such a chair which is economical in manufacture, pleasing in appearance and utilitarian in use.

An illustrative embodiment of the invention is shown in the accompanying drawings, wherein:

Figure 1 is a front elevational view of the chair in its unfolded position;

Figure 2 is a side elevational view thereof;

Figure 3 is an enlarged fragmentary sectional view on line 3—3 of Figure 1;

Figure 4 is a side elevational view of the chair with the seat thereof in partially raised position, the legs thereof remaining in their unfolded position;

Figure 5 is a side elevational view of the chair in completely folded position; and

Figure 6 is a fragmentary sectional view similar to Figure 3 but showing the same parts in their folded positions.

Referring to these drawings wherein like parts of the structure are designated by the same numerals in the several views, the folding chair generally comprises an inverted U-shaped tubular metal frame 10 forming a support for a curved back 11 which is preferably of sheet metal. The back is positioned below the horizontally disposed medial portion 12 of the frame 10 and said back is suitably secured to this medial portion 12 of the frame 10 and to the frame's oppositely disposed spaced parallel portions which form spaced angularly disposed front legs 13.

The tubular frame 10 is here shown as formed from sheet metal stock to give it strength and rigidity at light weight, the longitudinal edges of the metal stock being flanged inwardly to form a finished and reinforcing seam 14. A tie rod 15 connects the front legs 13 intermediate the ends thereof, the opposite ends of the tie rod 15 passing through the seams 14 and opposite walls of the front legs 13 respectively.

An inverted U-shaped reinforcing member 16 has its medial portion 17 secured as by welding to the tie rod 15 and has its lower ends 18 secured to the lower ends of the front legs 13, these lower ends 18 passing through the seams 14 and opposite walls of the front legs 13 respectively.

A pair of tubular metal spaced rear legs 19 formed in a manner like that of the frame 10, are pivotally connected at their upper ends to yokes 20 which embrace and are secured to the opposite front legs 13 respectively. An upper strut 21 and a lower strut 22 connect the rear legs 19, the opposite ends of these struts 21, 22 passing through seams 23 and the opposite walls of the rear legs 19 respectively.

A seat 24 is secured by bolts 25 and nuts 26 to the horizontally inwardly extending flanges 27 of a pair of oppositely disposed angle iron seat supporting brackets 28, the depending flanges 29 of which are pivotally secured to the tie rod 15 which passes through apertures 30 in the flanges 29. A coiled expansion spring 31 is preferably interposed between each depending flange 29 and the front leg 13 adjacent thereto, these springs 31 circumscribing the tie rod 15 and serving to center the seat between the opposite sides of the chair.

A pair of links 32 are pivotally secured at their rearward ends to the rear legs 19 respectively of the chair by means of pins 33 passing through the rear legs and through these links 32. The forward end of each link 32 is pivotally secured at 34 to the rearward end of a slotted plate 35, the forward ends of the plates 35 being pivotally secured by means of pins 36 to the front legs 13 respectively, each pin 36 passing through the seam 14 and opposite wall of its front leg 13. Spacer collars 37 circumscribing the pins 36 space the forward ends of plates 35 slightly inwardly from their adjacent front legs 13.

As best seen in Figures 3 and 6, the slot 38 in each plate 35 comprises an arcuate rearward portion 39 concentric with the tie rod 15 in the unfolded position of the chair and a portion 40 inclined from the arcuate portion 39. Pins 41 laterally secured to each depending flange 29 of the seat supporting brackets 28, engage in the slots 38 of plates 35.

It will thus be seen that when the chair seat

is raised from its position shown in Figures 2 and 3 to its position shown in Figure 4 permitting the occupant of the chair to rise to allow other persons to pass in front of him, the seat freely turns about the tie rod 15, the pins 41 moving freely in the arcuate portion 39 of slot 38.

It will likewise be seen that the chair may be completely folded, as in instances of clearing an auditorium of chairs, merely by raising the seat farther to its positions shown in Figures 5 and 6. In thus raising the seat farther, pins 41 pass into portions 40 of slots 38 and the plates 35 are caused to rotate counter-clockwise, as viewed in Figures 3 and 6, about their pivots 36, thus moving pivot 34 and the forward end of link 32 downwardly to draw the rear legs 19 of the chair toward the front legs 13 thereof. Conversely, when the chair is in its folded position, the lowering movement of the seat effects clockwise rotation of plate 35 thus unfolding the chair.

A stop is provided for preventing lowering movement of the seat beyond its position of use, and as here shown comprises a pair of rubber disks 42 secured by rivets 43 to the rearward ends of flanges 27 of the seat supporting brackets 28. These disks 42 contact the under side of the upper strut 21 which extends between the rear legs 18 of the chair as soon as the seat reaches its lowered position of use.

It will thus be seen that the folding chair herein shown and described is provided with a seat which may be partially raised without a folding of the legs thereof and that the chair is rugged and sturdy in construction, economical in manufacture and pleasing in appearance.

While but one specific embodiment of the invention has been herein shown and described, it will be understood that certain details of the construction shown may be altered or omitted without departing from the spirit of the invention as the same is defined by the following claims.

I claim:

1. In a folding chair comprising a frame forming a back support and spaced front legs, a pair of tied spaced rear legs pivotally secured to the frame, a seat pivotally secured to the front legs, a link pivotally secured to a rear leg, a slotted plate pivotally secured to said link and pivotally secured to the adjacent front leg, means on the seat engaging within the slot, said slot having a portion thereof concentric with the seat pivot in the unfolded position of the chair to permit free turning movement of the seat between lowered and partially raised positions and another portion thereof inclined from the first-mentioned portion for effecting folding and unfolding movements of the rear legs of the chair relative to the front legs thereof during turning movement of the seat between partially raised and fully raised positions.

2. In a folding chair comprising a frame forming a back support and spaced front legs, a pair of tied spaced rear legs pivotally secured to the frame, a seat pivotally secured to the front legs, a link pivotally secured to a rear leg, a slotted plate pivotally secured to said link and pivotally secured to the adjacent front leg, means on the seat engaging within the slot, said slot having a portion thereof concentric with the seat pivot in the unfolded position of the chair to permit free turning movement of the seat between lowered and partially raised positions and another portion thereof inclined from the first-mentioned portion for effecting folding and unfolding movements of the rear legs of the chair relative to the front legs thereof during turning movement of the seat between partially raised and fully raised positions, and a stop for preventing lowering movement of the seat beyond its lowered position of use.

MERRITT K. ORTON.