May 23, 1933. G. W. HAMBROOK ET AL 1,910,539

FOLDING CHAIR

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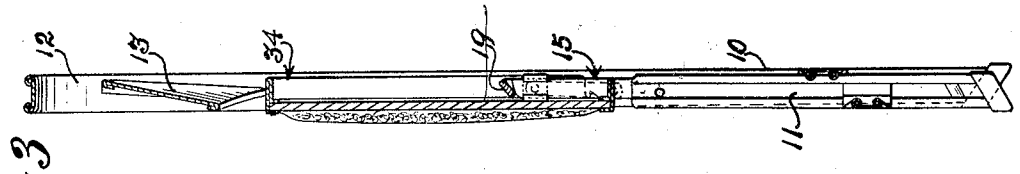


Fig. 3

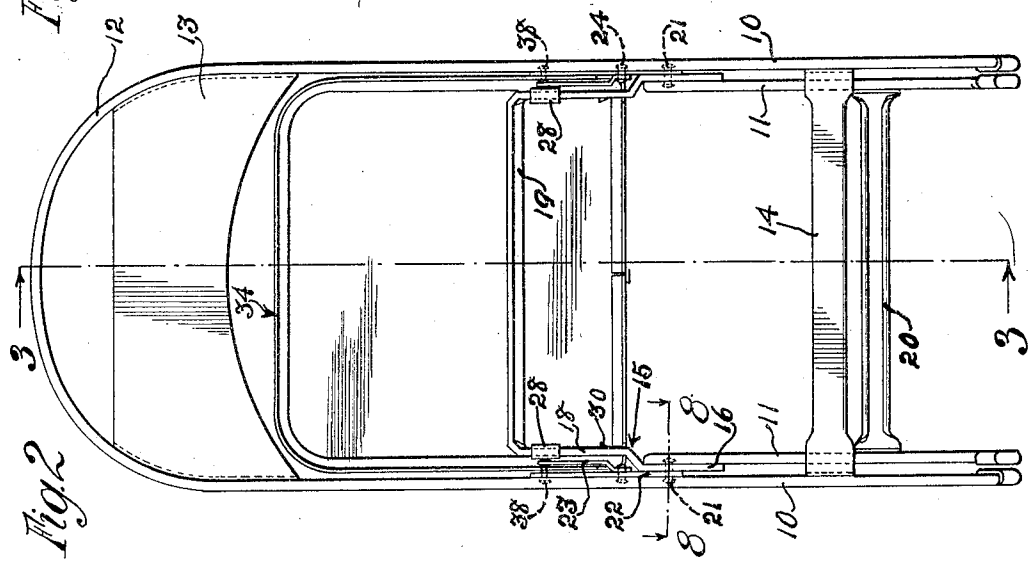


Fig. 2

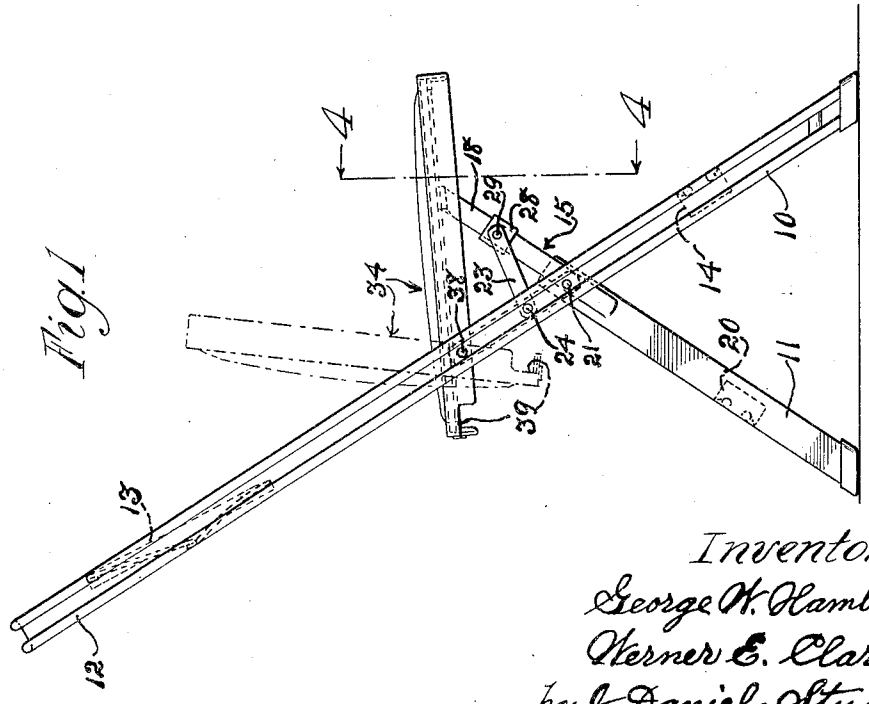


Fig. 1

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FOLDING CHAIR

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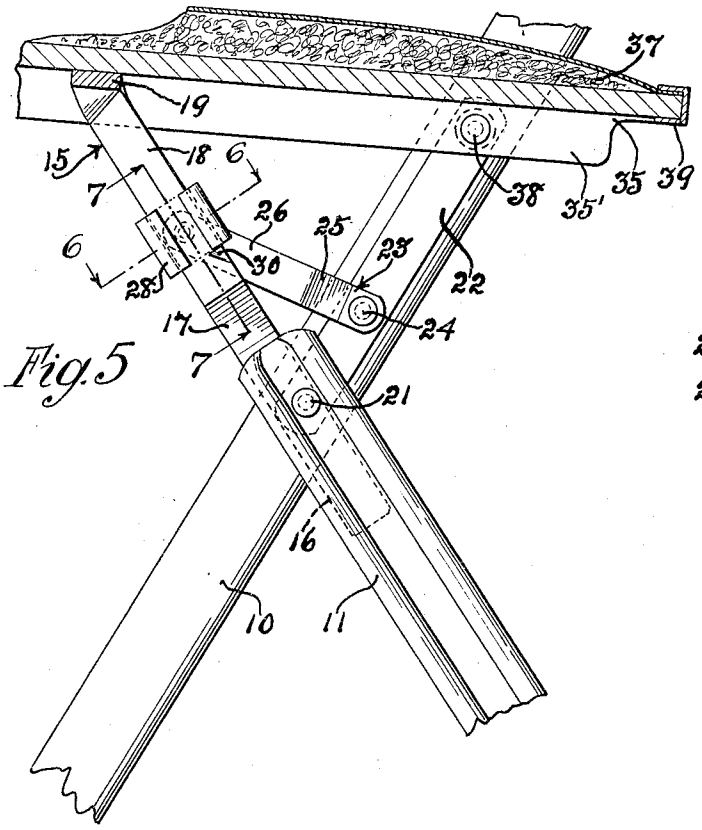


Fig. 5

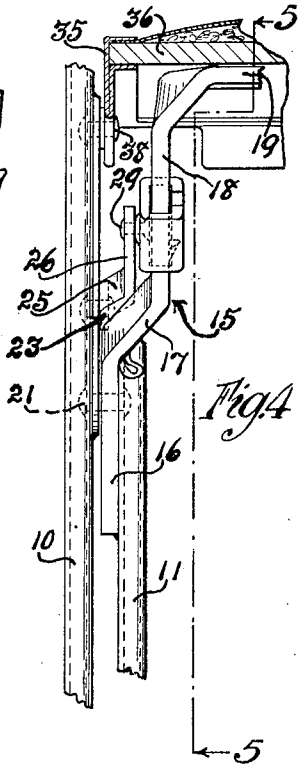


Fig. 4

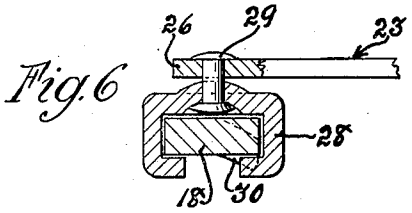


Fig. 6

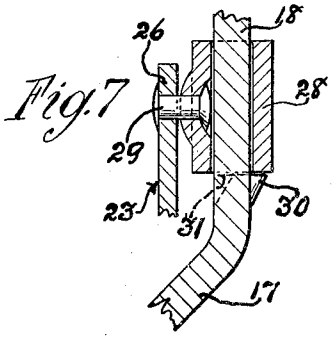


Fig. 7

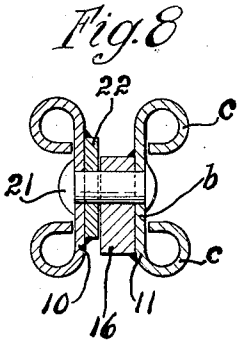


Fig. 8

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UNITED STATES PATENT OFFICE

GEORGE W. HAMBROOK AND WERNER E. CLARIN, OF CHICAGO, ILLINOIS

FOLDING CHAIR

Application filed December 18, 1931. Serial No. 581,940.

This invention relates to improvements in a folding chair.

One of the objects of this invention is to provide an improved folding chair which has its parts so arranged that it can be readily folded up into a small space, and so that it will fold up automatically when cast onto the floor.

Another object is to provide a folding chair which can be economically manufactured, is sturdy and durable in construction, and is comfortable in use.

A further object is to provide such a sturdy and comfortable chair with a link connection including slidable sleeve and stop means for operatively and foldably connecting the two pairs of legs.

These and other objects and advantages will become apparent from the following description, taken in connection with the accompanying drawings, in which,

Fig. 1 is a side elevational view of a folding chair embodying our invention, showing the chair in its open position and indicating in dot-and-dash lines how the seat may be readily raised.

Fig. 2 is a front elevational view showing the chair in its folded or closed position.

Fig. 3 is a vertical sectional view, taken on line 3—3 of Fig. 2, showing how the various parts of this chair will fold compactly within the confines of the main legs.

Fig. 4 is an enlarged vertical sectional view, taken on line 4—4 of Fig. 1, showing the improved means herein for connecting the pairs of legs.

Fig. 5 is a vertical sectional view thereof, taken on line 5—5 of Fig. 4.

Figs. 6 and 7 are enlarged sectional views, taken respectively on lines 6—6 and 7—7 of Fig. 5.

Fig. 8 is an enlarged cross-sectional view, taken on lines 8—8 of Fig. 2, showing the means for pivotally connecting the legs.

The drawings illustrate an improved folding chair embodying our invention in its preferred form of construction, which comprises a main frame or pair of main legs including the two front legs 10 of the chair, and a short frame or pair of short legs including the rear legs 11, pivotally and foldably mounted therebetween.

The front legs 10 of the main frame are provided with an integral bowed upper portion 12, the two legs and said portion being preferably made from one bar or piece of stock bent into the desired shape. A panel or back plate 13 is secured on bowed portion 12, being properly curved to provide a comfortable back-rest for the chair; and a cross-bar 14 connects the lower parts of the legs, said cross-bar being preferably of the same stock as the legs. This stock preferably consists of metal bars curled at the edges forming reinforcing edge columns *c* with a web *b* therebetween. See Fig. 8.

The short leg frame includes the rear legs 11 and a yoke-shaped bar 15 connecting the same, the end portions of which provide lower arms 16 secured to the upper parts of said legs, as by spot welding. Portions 17 slant upwardly and inwardly from portions 16, above the legs, and portions 18 extend upwardly therefrom, the upper ends of said two portions 18 being bent at an angle inwardly and being integral with a top bar 19 which presents a substantially horizontal top surface, so that the seat will rest properly thereon. A cross-bar 20 connects the lower parts of said legs.

The pair of legs 11 are swingably mounted between the main legs 10 by means of pivot pins 21, each pin extending through the webs *b* of legs 10 and 11 and through a reinforcing plate or strap 22 secured on leg 10, also through said arm 16. See Fig. 8. This pin is preferably in the form of a rivet and holds the members together.

The means provided herein for limiting the opening movement of the pairs of legs and for retaining the legs in the open position comprises link means 23, preferably a pair of links, each link being pivotally connected at its lower end to one of the legs, preferably by means of a pivot pin or rivet 24 extending through it and through leg 10 and plate 22 secured thereon, a short distance above pivot pin 21. Each link is bent inwardly from leg 10 for a short portion 25, and then extends upwardly providing an offset portion 26.

A sleeve or embracing band 28 is pivotally attached to said upper portion of the link, by the use of a pivot element or rivet 29, and slidably embraces portion 18 of connecting member 15.

The stop means provided for limiting the opening movement of the sleeves and links preferably comprises a stop lug or projecting tongue 30 provided on each portion 18 of the yoke-shaped member, preferably by punching or cutting and pressing laterally a small part of the metal at one edge of each portion 18, substantially as indicated at 31 in Fig. 7 of the drawings. This lug or tongue 30 is readily punched or formed on member 15 during the forming or shaping of this yoke-shaped member out of the selected strap metal, and sleeve 29 engages and is supported on said lug when the legs are in the open position, as best shown in Figs. 5 and 7.

The seat 34 comprises an outer metal frame member 35 and a panel or seating member 36 mounted therein, said panel being preferably of rigid material and having cushioning means 37 on the top thereof, as indicated in Fig. 5. Said metal member 35 includes a depending flange 35′, and a pivot pin or rivet 38 extends through said flange at each side of the seat, a short distance forwardly from the rear end 39 of the seat, and through plate 22 and leg 10, thereby pivotally mounting the seat between said legs 10 to extend a certain distance rearwardly from pivot pins 38, substantially as indicated in the drawings. The forward part of the seat is adapted to rest freely upon the upper horizontal part 19 of the connecting member 15 on legs 11, so that it may be readily lifted therefrom.

The seat may thus be readily lifted and moved to its folded position, without disturbing the open position of the legs while standing on the floor. In such folded position the rear end 39 of the seat will engage the rear ends of links 23, so that the seat will be limited in its upwardly and rearwardly swinging movement, and will be confined between the upper parts of legs 10, as may be observed from Figs. 1 and 2.

It should be noted that in this chair, the rear part of the seat extends a certain distance rearwardly of the pivot pins 38, and that the front part of the seat rests freely on yoke part 19 on short legs 11, in such a manner that when a tall person is seated on this seat and his knee portions of the legs extend higher than the front part of the seat, this seat will readily tilt on its pivot pins and will automatically adjust itself and conform to the particular position of the thigh of the occupant. This in conjunction with the proper positioning and curving of the backrest provides an exceptionally comfortable chair which automatically adjusts itself to snugly fit and accommodate the various sized persons.

With this construction of folding chair, the pair of short legs and the seat can be readily folded between the main legs, so as to require a minimum of space for packing or storing, and the seat may be raised while the legs remain standing to facilitate passing between a chair and the one in front thereof; and the entire construction provides a durable and economical chair which is very comfortable and is adapted for many purposes and uses.

We claim:

1. A folding chair comprising two pairs of legs foldably connected, a seat swingably mounted between one of the pairs of legs and adapted to be supported on the other pair of legs to be readily lifted therefrom, link means pivotally mounted on one of said pairs of legs, sleeve means on said link means slidably embracing part of the other pair of legs, and integral stop means projecting from said leg part, to engage said sleeve means and limit the unfolding movement of said pairs of legs.

2. A folding chair comprising a main supporting frame and a short supporting frame pivotally and foldably mounted therebetween, said short frame including two legs and a connecting member thereon having upper seat supporting means, a seat swingably mounted between the main frame and adapted to be supported on said supporting means, a link member on the main frame, and sleeve means connecting the link and short frame and stop means for the sleeve means, to limit the movement of the frames in their open position.

3. A folding chair comprising a main supporting frame, a short supporting frame foldably mounted therebetween and including upper arm means having supporting means thereon, a seat swingably mounted between the main frame and adapted to bear on said supporting means, link means mounted on said main frame and carrying means for slidably embracing said arm means, and tongue means projecting from said arm means, to engage the embracing means and limit the movement of said embracing means and of the two frames to the open position.

4. A folding chair comprising a pair of main legs and a pair of short legs foldably mounted therebetween, said pairs of short legs including two metal leg members also a yoke-shaped strap member having its side parts secured to said leg members and including a substantially level top portion, a seat swingably mounted between said main legs and adapted to rest with its forward part detachably on said top portion, link means pivoted on said main legs, sleeve means on said link means slidably embracing said strap member, and punched-over means projecting from a side of said strap member, to engage the sleeve means and limit the movement of said sleeve means and pairs of legs to open position.

5. A folding chair comprising a pair of main legs and a pair of short legs foldably mounted therebetween, said pair of short legs including two leg members of metal bars having web portions and curved reinforcing portions, also a yoke-shaped strap member having side arms secured to said web portions and including a substantially level top part, a seat pivotally mounted between said main legs and adapted to rest freely with its forward part on said top part of the strap to be readily lifted therefrom, link means pivoted on said main pair of legs, sleeve means pivoted on said link means to slidably embrace the side arms of said yoke-shaped member, and integral tongue portions projecting from sides of said side arms, to engage the sleeve means and limit the movement thereof and of said pairs of legs in their open position.

6. A folding chair comprising a pair of main legs and a pair of short legs foldably mounted therebetween, said pair of short legs including two leg members and a yoke-shaped member having side arms secured to the leg members and having a substantially level top portion, a seat and pivot means for swingably mounting it between said pair of main legs, said pivot means being placed a substantial distance from the rear end of the seat, to facilitate tilting of said seat, link means pivoted on said main legs, sleeve means on said link means slidably embracing said side arms, and integral stop means projecting from the side arms to engage the sleeve means for limiting the movement of said sleeve means and said pair of legs in the open position, said seat having its forward part bear loosely on said yoke-shaped member to be freely lifted therefrom, whereby the seat is rendered tiltable according as the thigh portion of an occupant is spaced rearwardly of the pivot means, and the seat may be readily folded within the confines of the main pair of legs.

In testimony whereof we have signed this specification.

GEORGE W. HAMBROOK.
WERNER E. CLARIN.