Oct. 12, 1943. F. J. REILLY 2,331,629

CONVERTIBLE CHAIR

Filed April 11, 1942

FIG. 1.

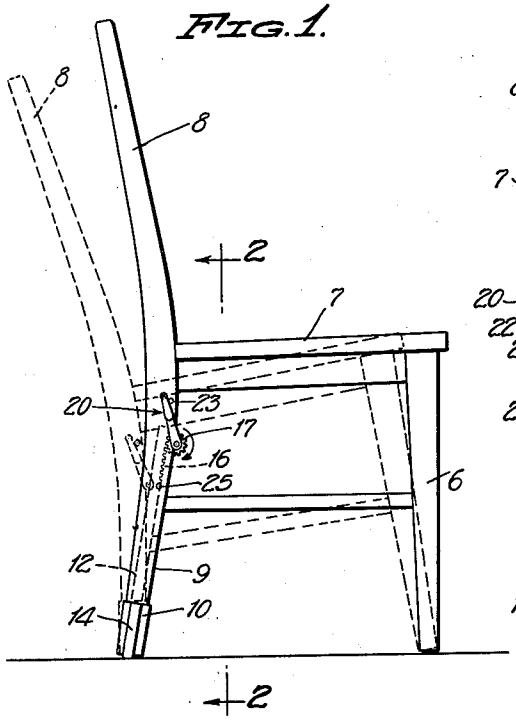


FIG. 2.

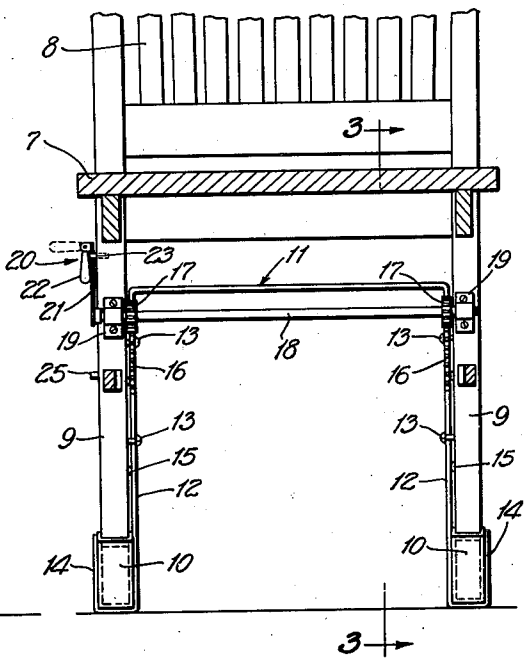


FIG. 3.

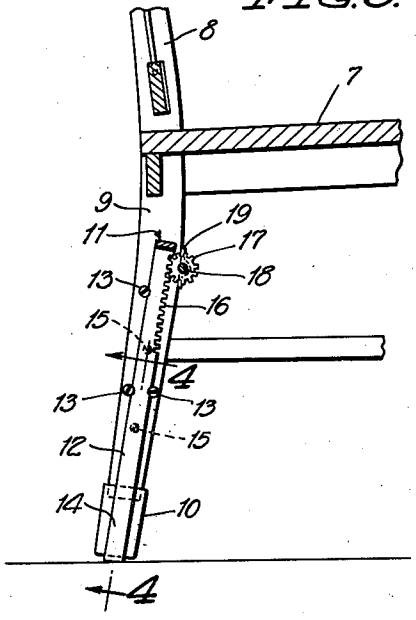


FIG. 5

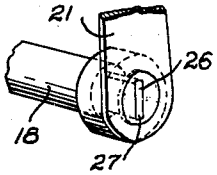
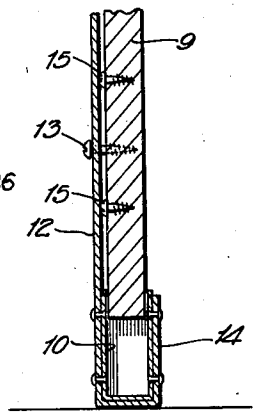


FIG. 4.



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CONVERTIBLE CHAIR

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7 Claims. (Cl. 155—77)

A chair which affords comfortable seating for a person in conventional pose at a table, as in banqueting, and which may be simply converted to a more or less tilted position when the occupant desires to relax, as after the meal, for attention to speakers or other entertainment, has obvious advantages over two complete chairs, each with an individual function. My invention provides such a chair of a simple, rugged and easily operated construction, which is readily applicable to existing chairs.

The back of the chair consists essentially of two interlocking sections which may be made to telescope one into the other to produce, when desired, a tilting effect, the telescoping motion being preferably achieved by turning a handle operating a rack and pinion.

In the drawing—

Fig. 1 shows my improved chair in full lines in straight, formal position, and in dotted lines in tilted position.

Fig. 2 is a transverse vertical sectional view taken in the plane indicated by the line 2—2, Fig. 1.

Figs. 3 and 4 are fragmentary sectional views taken on the lines indicated at 3 and 4 illustrating parts of the mechanism.

Fig. 5 is a perspective view of a detail.

The chair frame preferably has the stout, rugged and simple construction shown in Fig. 1 with front legs 6, seat 7 and back 8. Each rear frame or leg is in two sections, the upper section 9, which may be of wood, being firmly attached to the rest of the chair frame, and the lower section comprising two cups or ferrules 10, which may be of steel, brass or other suitable material, axially disposed with reference to leg sections 9 and receiving the lower ends of the rear leg sections 9 and acting as feet therefor. An inverted U-shaped frame or yoke 11, whose approximately vertical limbs 12 are held by guide screws 13 entering the leg sections 9 and engaging the edges of the yoke limbs so as to guide the yoke as it moves upward and downward with relation to the rear leg sections 9, terminates at its lower end in U-shaped stirrups 14 to which are riveted the ferrules 10. The heads of screws 15 frictionally engage the yoke limbs 12. The front edges of the limbs 12 of yoke 11 are each provided with a toothed rack 16, and these racks are held by uppermost guide screws 13 so that their teeth remain in mesh with the teeth of two pinions 17, one near each end of a rotatable shaft 18 mounted in bearing straps 19 affixed to the front sides of the rear legs of the chair, closely under the chair seat. Fastened to one end of shaft 18 is the arm of a turning handle or lever 20 therefor, comprising a flat spring 21 and a finger piece 22 hinged thereto, so that it can be extended for use or turned down into inconspicuous position when out of use. A convenient method of fixing the spring lever 20 to the shaft 18 is shown in Fig. 5. The inner end of the spring is slotted, as at 26, and fitted over a tongue or reduced part 27 on the shaft 18, the metal of the tongue being then upset, to make the attachment secure. The flexibility of the lever 20 enables the operator to set it behind the pin 23 or in front of pin 25. The racks, gears and shaft form an equalizer, so that the rear legs will shorten and lengthen equally and evenly, keeping the front edge of the seat level and horizontal while the side edges are changing from horizontal to inclined position or the reverse.

When the chair is to be used in its upright condition, the handle or lever 16 is rotated counterclockwise as shown by the arrow, Fig. 1, until the pinions reach the upper ends of their racks and the handle arm is then placed behind the pin 23. At this point, the upper section of the rear legs of the chair are at the upper end of their movement in the ferrules, as shown in full lines, the effect being that the composite rear legs comprising parts 9 and 10 are in their most elongated relation, and the seat of the chair is approximately level. The ferrules and yoke are held firmly to a right-line movement, and no bending or loose motion occurs between ferrules and leg sections 9. If the handle is freed from the pin 23 and the shaft is rotated or is allowed to rotate clockwise under gravity for an entire revolution, the chair body pivots about the line on which the front legs rest upon the floor until the lower ends of leg sections 9 enter the ferrules 10 to the bottom and the chair is in the tilted position shown in dotted lines in Fig. 1, in which position the occupant will rest in a relaxed reclining pose but with such relation to the center of gravity of the seat and occupant as to be free from any sense of insecurity. At this point the handle may be made to come to rest against the rear of pin 23. If desired, the rotation of the shaft can be stopped when it has made only one half a revolution, and the handle being then turned to a position in front of pin 25, the chair is arrested and held in semi-reclining position.

It is obvious that many changes in detail may be made in the structure as illustrated and de-

scribed without departing from the substance of the appended claims.

I claim:

1. A chair convertible for use in either upright or reclining position, comprising in combination a rigid chair frame including two non-extensible front legs and in which the rear legs are in two axially disposed sections, telescopically connected, and have means for causing telescopic movement of the sections of both rear legs simultaneously and equally to effect an upright or a tilted position of the chair comprising a yoke attached to both lower leg sections, means on both upper leg sections for holding the yoke and guiding it vertically, and hand-controlled means connected to both upper leg sections controlling relative movement of the upper and lower leg sections.

2. A convertible chair comprising in combination a rigid chair frame including two non-extensible front legs and having telescoping sections forming the rear legs of its frame, one section comprising ferrules axially disposed with reference to the other section, and means for adjusting the ferrules axially of both rear legs simultaneously and equally, so as to give more or less inclination to the seat comprising a yoke attached to both lower leg sections, means on both upper leg sections for holding the yoke and guiding it vertically, and hand-controlled means connected to both upper leg sections controlling relative movement of the upper and lower leg sections.

3. A convertible chair having a normally level seat, rear legs having feet adjustable to extend or lessen the length of the legs, a U-shaped yoke having toothed racks and mounted to move in a substantially vertical path on said legs and connected to operate said feet, operating means for said yoke comprising a shaft with pinions engaging said rack, and hand-operating means for turning said shaft.

4. The convertible chair of claim 3, having pins arranged in the path of the hand-operated means and engaging it to hold the seat in set position.

5. The convertible chair of claim 3, in which the rear legs have guides engaging the racks and holding them in engagement with the pinions.

6. A convertible chair having rear legs divided into relatively movable upper and lower sections, ferrules forming the lower leg sections embracing the lower ends of the upper leg sections, a U-shaped yoke having stirrups fastened to the ferrules and means for actuating said yoke to vary the depth of engagement of the leg sections in said ferrules.

7. A convertible chair having sectional rear legs of telescopic sections, a U-shaped yoke guided on one section of said legs, and having stirrups on which the other section is mounted, and hand-operated means for operating the yoke to axially shift one section telescopically of the other.

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