April 28, 1931. M. KRAUSE 1,802,608

CHAIR

Original Filed March 12, 1929

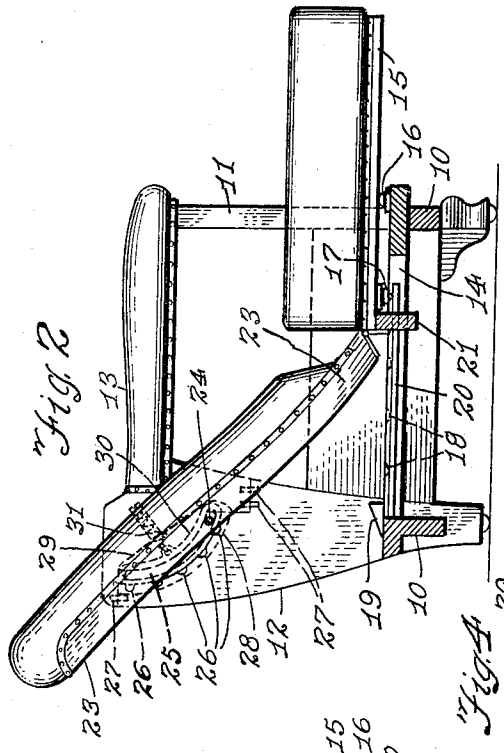


Fig. 2

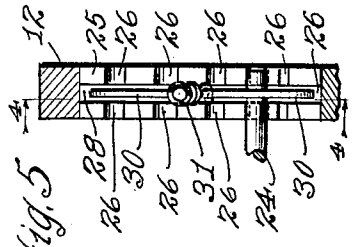


Fig. 5

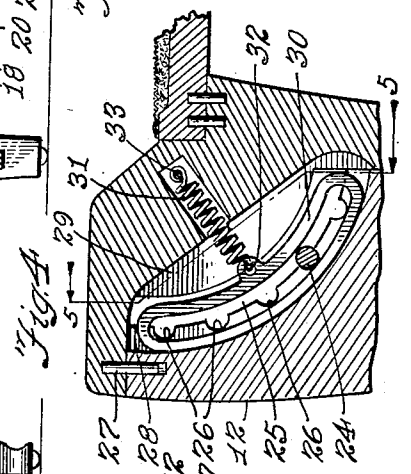


Fig. 4

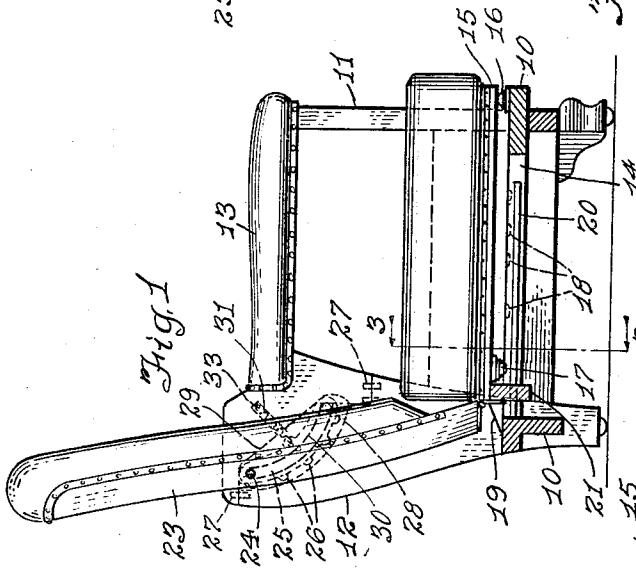


Fig. 1

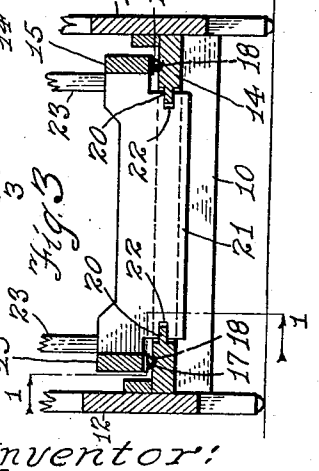


Fig. 3

Witness:
L. B. Graham

Inventor:
Max Krause
By J. McRoberts
his Att'y.

Patented Apr. 28, 1931 1,802,608

UNITED STATES PATENT OFFICE

MAX KRAUSE, OF CHICAGO, ILLINOIS

CHAIR

Application filed March 12, 1929, Serial No. 346,417. Renewed September 16, 1930.

My invention relates to chairs, and its main object is to provide new and improved inter-engaging means between the chair-frame and the adjustable back-member which in different positions of the latter on the frame are automatically interlocked by the weight of the user and are automatically unlocked when the chair is unoccupied.

The invention consists in certain organizations and arrangements of parts of which practical embodiments are shown in the accompanying drawing, in which:—

Fig. 1 is a view partly in sectional elevation and partly in side elevation of a chair made in accordance with my invention, the view being taken in part on the line 1—1 in Fig. 3 and showing the seat in its inner position in the frame.

Fig. 2 is a similar view on the same line with the seat in its extended position;

Fig. 3 is a view partly in section and partly in rear elevation on the line 3—3 in Fig. 1, with parts broken away;

Fig. 4 is a detail sectional view showing the means for automatically engaging and disengaging the back-frame and chair-frame, and

Fig. 5 is a detail sectional view on the line 5—5 in Fig. 4.

In the drawings the reference numeral 10 indicates generally the rectangular base of a chair-frame having usual feet, front and rear corner uprights 11 and 12, respectively, connected by side-arms 13. The base 10 has opposite longitudinal tracks 14 upon which the seat-frame 15 is supported by pairs of roller-bearings 16 and 17 respectively secured at each side of the front end of the base 10 and at each side of the rear end of the seat-frame so that the latter moves easily back and forth on the tracks, and the tracks are provided with one or more pairs of opposite seats 18 in which the rollers 17 rest in different adjusted positions of the seat-frame, and with rear stops 19 against which that frame abuts when its rollers 17 enter the rear seats 18 as shown in Fig. 1. The tracks 14 support opposite inwardly directed guide-rails 20 upon which travels a cross-piece 21 secured on the rear end of the seat-frame and having grooves or channels 22 in its ends to slidably engage the rails 20 and guide the seat-frame in its reciprocating movements and hold it against upward displacement and tipping, there being sufficient play between these parts to permit the rollers 17 to engage and disengage their seats. The back-frame 23 is hinged at its lower end to the rear end of the seat-frame 15, and carries above its center rigid lateral projections, preferably formed by the projecting ends of a cross-rod 24 fixed in the back-frame, and the upper portions of the rear uprights 12 are formed with inwardly and downwardly curved through-slots or guideways 25 in which the projections travel when the seat and back-frames are shifted. The guideways 25 are provided in their rear or outer walls with a plurality of inwardly opening seats 26 arranged in opposite pairs into which the ends of the rod can enter to hold the back-frame in any of its adjusted positions; the seats 26 correspond in number and arrangement with the seats 18, so that when the rollers 17 rest in their rear seats the rod aligns with its upper seats 26 as shown in Fig. 1, and when the rollers 17 rest in their front seats the rod aligns with its lowest seats as shown in Fig. 2, and correspondingly for intermediate positions of the seat frame. The upper ends of the uprights 12 are divided into sections along the line of the slots 25; the sections are held in position by suitable means, such as the dowels 27, and the opposite walls of their slots are formed with alined mortises 28 and 29 to form enclosed ways for metallic yokes or stirrups 30 having loops of substantially the contour of the slots and through which the ends of the rod 24 pass. The yokes are free to move transversely of the slots 25 and are spring-stressed to hold the rod out of engagement with its seats 26 when the chair is unoccupied as shown in Figs. 1 and 2, so that the back 23 can be easily and freely shifted with the seat 15, and to yield under increased pressure, as for example the weight of a person occupying the chair, to permit the rod to engage a pair of its seats as shown for example in Fig. 4 and lock the back and seat sections in position on the frame. The spring support for the yokes may be provided in any suitable

manner, and in the exemplification shown each yoke is suspended in its housing by a retractile coil-spring 31 connected at one end to an eye 32 on the yoke and at its other end to a pin 33 in a recess in the upright; the only essential feature of the spring-support is that it be strong enough to normally overcome the weight or pressure of the chair-back itself, so that the rod will not engage its seats when the chair is unoccupied and will ride on the loop past its seats when the seat-section is moved outwardly or inwardly on the base.

When the parts are positioned as shown in Fig. 1, the rod 24 is aligned with the upper pair of seats 26, but is held out of engagement therewith by the spring-stressed yokes, and when the seat is moved outwardly into an extended position, as for example in Fig. 2, the rod rides along the yokes past its seats and does not enter or engage them; and the same action occurs when the seat is moved inwardly. When the connected seat and back are adjusted to any position in which the rod aligns with a pair of its seats 26 increased weight or pressure on the back, as by an occupant of the chair, overcomes the resistance of the springs and interlocks the rod with the seats as shown in Fig. 4 for example, and the back and seat are held in position; the engagement of the rollers 17 and their seats 18 supplements the interengagement of the other parts for this purpose. When the chair is vacated the springs 31 restore the parts to their position shown in Figs. 1 and 2, and the back-frame is free to be easily moved with the seat-frame into another position. The rollers 17 engaging their seats 18 hold the seat and back in place when the chair is unoccupied.

I claim:

1. In a chair, the combination with a frame having opposite tracks and curved guides above the tracks provided with seats, of a seat-section positioned to travel on said tracks, a back-section hinged to the inner end of said seat-section, lateral projections on the back-section movable in said guides, and spring-actuated yokes mounted in the frame and normally holding the projections out of engagement with said seats.

2. In a chair, the combination with a frame having opposite tracks and inwardly curved guides located above the tracks and provided with seats, of a seat-section positioned to travel on said tracks, a back-section hinged to the inner end of the seat-section, a cross-rod fixed on the back-section and movable in said guides and adapted to enter said seats, and spring-actuated yokes mounted in the frame and normally holding said rod out of engagement with said seats.

3. In a chair, the combination with a frame having opposite tracks and inwardly curved slots above the tracks and seats in the outer walls of the slots, of a seat-section positioned to travel on said tracks, a back-section hinged to the inner end of said seat-section, a cross-rod fixed on the back-section and movable in said slots and adapted to enter said seats, the walls of said slots having opposite mortises to form ways, yokes corresponding in contour to said slots and movable transversely thereof in said ways and engaging said rod, and springs normally supporting said yokes in position to hold said rods outside its seats.

In testimony whereof I affix my signature.

MAX KRAUSE.