

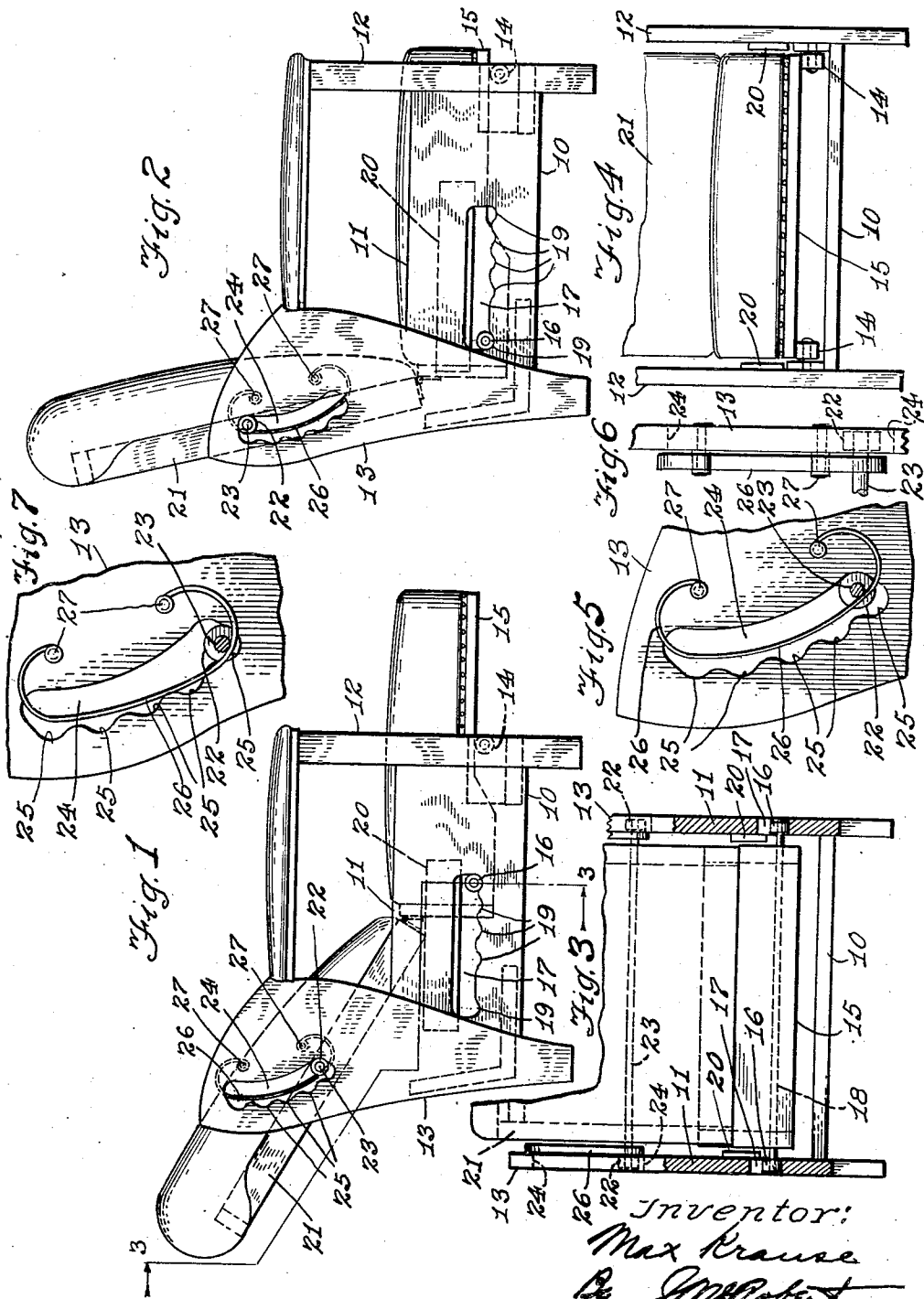
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CHAIR

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UNITED STATES PATENT OFFICE

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CHAIR

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My invention relates to chairs, and its main objects are to provide new and improved interengaging means between the chair frame and the adjustable chair-back which in different positions of the back on the frame are automatically interlocked by the weight of the user and are automatically unlocked when the chair is unoccupied; and also means between the chair-frame and seat-member for holding the latter in different adjusted positions on the frame and for guiding it in its movements thereon and preventing its displacement or tilting downward.

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 in side elevation of a chair made in accordance with my invention, and showing the positions of the parts when the seat-member is extended;

Fig. 2 is a similar view showing the positions of the parts when the seat-member is in its inner 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 front view;

Fig. 5 is a detail side view showing the means for automatically engaging and disengaging the back-frame and chair-frame;

Fig. 6 is a detail end view of the parts shown in Fig. 5; and

Fig. 7 is a view similar to Fig. 5 with parts in secondary positions.

In the drawings the reference numeral 10 indicates generally a substantially rectangular chair-frame having usual supporting feet, sides 11, and front and rear corner uprights 12 and 13, respectively. The front uprights carry opposite inwardly extending rollers 14 upon which the seat-frame 15 is supported at its outer-end, and the seat-frame carries near its rear end outwardly extending rollers 16 running in opposite slots or guideways 17 in the sides 11 of the chair-frame. The rollers are preferably revolvably mounted on a through-rod 18 fixed in the frame 15, and the lower walls of the slots 17 are provided with a plurality of pairs of opposite cross-grooves forming seats 19 in which the rollers 16 rest in different positions of the seat; the ends of the slots form stops against which the rollers abut to limit the travel of the seat-frame. The slots 17 are deep enough to allow the roller to move over the projections between the seats 19, and strips 20 are secured on the inner faces of the sides 11 above the slots to limit the upward movements of the rod and also laterally engage against the inner faces of the rollers to hold them against lateral displacement as they move over the intermediate projections; the seat-frame is guided in its reciprocating movements and held against upward displacement at its rear and downward tipping at its front. The back-frame 21 is hinged at its lower end to the rear end of the seat-frame, and carries above its center laterally projecting rollers 22, preferably journaled on the projecting ends of a cross-rod 23 fixed in the back-frame, and the upper portions of the rear uprights 13 are formed with inwardly and downwardly curved through-slots or guideways 24 in which the rollers travel when the seat and back-frames are shifted. The guideways 24 are provided in their rear or outer walls with a plurality of inwardly opening seats 25 arranged in opposite pairs into which the rollers 22 enter to hold the back-frame in any of its different positions; the seats 25 correspond in number and arrangement with the seats 19, so that when the rollers 16 rest in their rear seats the rollers 22 align with their upper seats 25 as shown in Fig. 2, and when the rollers 16 rest in their front seats the rollers 22 align with the lowest seats as shown in Fig. 1, and correspondingly for intermediate positions of the seat-frame. The rollers 22 are normally held out of engagement with the seats 25 by springs 26 which are attached at their ends as at 27 to the inner faces of the uprights 13 and are curved to correspond to the slots 24 and arranged in front of the seats 25 and back to the ends of the cross-rod 23; the springs normally hold the rollers 22 out of their seats under the weight or pressure of the back-frame so that the latter can be freely and easily shifted with the seat-frame, but the springs yield

under increased pressure on the back-frame, as for example the weight of a person occupying the chair, to permit the rollers 22 to engage seats 25, as shown for example in Fig. 7. The springs are strong enough to overcome the normal weight or pressure of the back-frame and disengage the rollers 22 from the seats in which they rested under the weight of an occupant and hold the rollers out of the seats while the chair is unoccupied. The springs normally support the rod in position so that the rollers 22 will move past their seats when the seat-section is moved inwardly or outwardly on its base.

When the parts as positioned as shown in Fig. 2 the rollers 22 are aligned with the upper pair of seats 25, but are held out of engagement therewith by the springs, and when the seat-frame is moved outwardly into an extended position, as for example in Fig. 1, the rod rides along the springs and the rollers pass outside their seats; 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 rollers 22 align with a pair of seats 25 increased weight or pressure on the back sufficient to overcome the resistance of the springs interlocks the rollers with the seats, as shown in Fig. 7 for example, and the back and seat are held in position; the engagement of the rollers 16 and their seats 19 supplements the interengagement of the rollers 22 and their seats to hold the connected back and seat sections securely in any desired position. When the chair is vacated the springs 26 restores 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 16 on the rear end of the seat-section carry the weight of the combined seat and back sections which anchors them in their seats 19 in any position of the combined sections when the chair is unoccupied, and these rollers and the curved contour of their seats afford an easy rolling friction between the combined sections and the frame whereby the position of the former on the latter can be shifted with a minimum of effort.

I claim:

1. In a chair, the combination with a frame having opposite elongated slots in the rear ends of its sides forming tracks provided with opposite pairs of cross seats, of a seat-section having a through-rod provided with rollers positioned to travel in said slots and engage said seats, a back-section hinged to the inner end of said seat-section, interengaging means between said frame and back-section constructed to hold the back-section in different positions on the back-frame when the rollers enter different pairs of seats, and resilient members positioned on the frame to normally hold said interengaging means out of said holding relation.

2. In a chair, the combination with a frame having opposite tracks at its rear end and curved guides above the tracks, and opposite pairs of cross seats in the tracks, of a seat-section having lateral rollers positioned to travel on said tracks and engage its seats, a back-section hinged to the inner end of said seat-section, lateral rollers on the back-section movable in said guides, means to positively position the rollers in said guides, and resilient members positioned on the frame and normally holding the rollers out of engagement with said positioning means.

3. In a chair, the combination with a frame having opposite tracks at its rear end and inwardly curved guides located above the tracks and provided with seats, and opposite pairs of seats in the tracks, of a seat-section, rollers on the seat-section positioned to travel on the tracks, strips on the frame parallel with the tracks and above the rollers to position them on the tracks, a back-section hinged to the inner end of the seat-section and having a cross-rod provided with rollers traveling in said guides, and springs adjacent the guides to normally hold the rollers out of engagement with the guide-seats.

4. In a chair, the combination with a frame having opposite elongated slots in the rear ends of its sides forming tracks provided with opposite pairs of seats, rollers on the front portion of said frame, of a seat-section positioned to travel on said rollers, a through-rod in the rear end of said seat-section having rollers positioned to travel in said slots and engage opposite pairs of said seats, strips on the frame parallel with said slots and positioned above said rod to limit its upward movement when its rollers travel on said tracks, and a back-section hinged to the inner end of said seat-section and adjustably supported on said frame.

In testimony whereof I affix my signature.
MAX KRAUSE.