

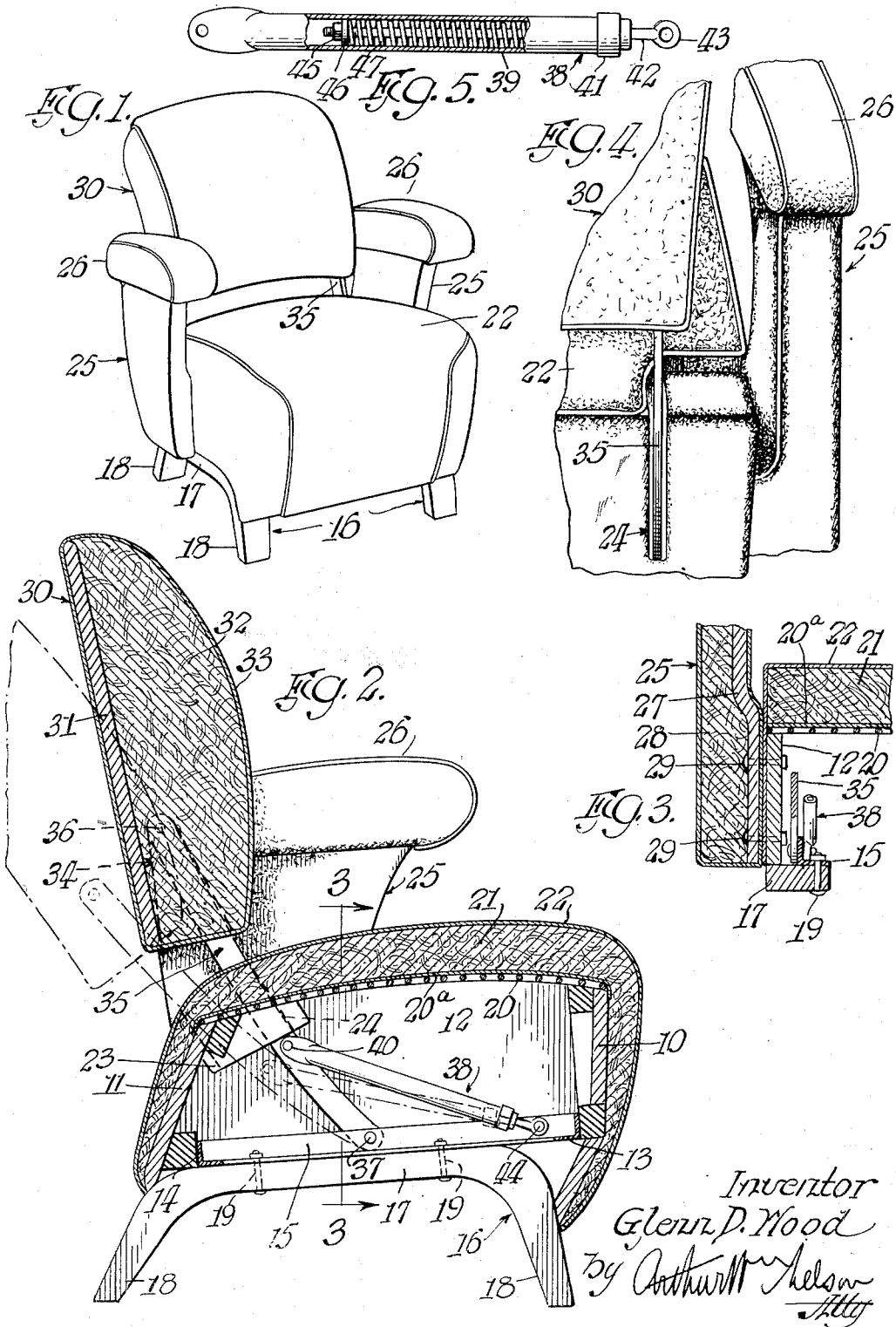
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CHAIR HAVING A RESILIENT BACK REST

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## CHAIR HAVING A RESILIENT BACK REST

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3 Claims. (Cl. 155-164)

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This invention relates to improvements in chairs of the kind that includes a rather deeply upholstered seat, a back rest and side arm rests mounted upon a suitable supporting base and in which chair an occupant may lounge as desired. In chairs of this kind, as heretofore made, the back rest is incapable of movement forwardly and rearwardly of the seat. Thus, even though the deep upholstery were "soft," the occupant could not change the angular position of his back without assuming a slumped position which, in itself, produces muscular fatigue making the occupant uncomfortable, instead of comfortable, as originally intended.

One of the objects of the present invention is to provide a chair of the kind above mentioned wherein the back rest is mounted for a forward and rearward cushioned movement under the swaying action of the occupant's torso, thereby permitting a change in position of the occupant without the necessity of slumping or of trying to slide on the seat.

Another object of the invention is to provide in a chair of this kind, a cushioning mechanism for the supporting arms of the back rest, which is disposed in an entirely concealed position within the seat frame of the chair and with said supporting arms extending through slot-like passages in the rear of the seat in a manner whereby only a minimum part of said arms is exposed to view from any side of the chair.

A further object of the invention is to provide in a chair of this kind, a cushioned supporting arm structure for the back rest with the parts thereof so arranged as to eliminate catching of the clothing or a pinching of any part of the body of the occupant.

The above mentioned objects of the invention, as well as the advantages thereof, will more fully appear as the specification proceeds.

In the drawing:

Fig. 1 is a three-quarter front perspective view of a chair embodying the preferred form of the invention.

Fig. 2 is a front to rear vertical sectional view through the chair of Fig. 1 on a scale enlarged thereover.

Fig. 3 is a detail vertical sectional view through one side of the chair as taken on the line 3-3 and on substantially the scale of Fig. 2.

Fig. 4 is a perspective detail view of parts associated with one of the rear corners of the seat of the chair.

Fig. 5 is a view in elevation of the cushioning brace appearing in Fig. 2, on a scale enlarged

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thereover and with parts broken away better to show the interior construction thereof.

Referring now in detail to that embodiment of the invention illustrated in the drawing, the chair embodies therein an open top and bottom, rectangular seat frame, preferably made of wood and including generally upright front and rear rails 10 and 11 respectively and side rails 12-12, which best appear in Figs. 3 and 4. Within the open bottom of the frame is located an angle bar frame, including front and rear members 13 and 14 respectively and side members 15-15. The vertical flanges of the members 13, 14 and 15 face upwardly and the horizontal flanges thereof face inwardly. The vertical flanges of the front and rear members 13 and 14 engage with and are fixed to the inside bottom portions of the front and rear rails 10 and 11 while the vertical flanges of the members 15 are spaced inwardly of the side rails 12-12.

The seat frame thus far described is supported upon a base which includes a substantially inverted U-shaped member 16 at each side of the frame. Each base member includes a substantially horizontal top portion 17 and front and rear legs 18. The top portion of each base member engages the under side of an associated angle bar member 15-15 and the bottom edge of each side rail of the seat frame and each top portion 17 is secured to the associated angle bar member 15 by means of bolts 19, as best appears in Figs. 2 and 3.

Operatively secured to the top edges of the seat frame rails 10, 11 and 12 is a sinuous upholstery spring 20, which is covered by a liner 20a of burlap or the like. Disposed upon this liner and extending down about the front and rear rails of the seat frame is a suitable padding material 21 that is enclosed by an appropriate covering material 22, such as an upholstery fabric. This provides the seat for the chair frame.

At each side of the rear portion of the seat frame is a wooden boxing 23 (see Fig. 2) which forms a slot-like passage 24 through the upper rear corner of the seat at each side thereof. This slot, which best appears in Fig. 4, opens at its lower end into the interior of the seat frame and the boxing forming each slot is lined with the same material as the material 22.

At each side of the chair, toward the rear thereof, is an arm rest structure that includes an upright side standard 25 carrying an arm rest 26 at the top. Each standard includes an upright wooden member 27 to give it rigidity and this member and the arm rest are suitably padded

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and enclosed in a fabric covering 28. The wooden member of each arm rest structure is engaged against a portion of an associated side rail 12 of the seat frame and is secured thereto as by the bolts 29 that appear in Fig. 3.

At the rear of the seat between the arm rest structures mentioned, is a back rest 30 having a rigid back and side supporting structure 31 of wood that carries padding material 32 enclosed in an upholstery fabric covering 33. In each side supporting structure is provided a substantially three sided recess 34 that best appears in dotted lines in Fig. 2 and this recess opens at its base end through the bottom of the back rest. The recesses 34 in the back rest are spaced laterally apart to accord with the slot-like passages 24 in the seat.

The back rest is supported by a pair of supporting arms 35 and the upper portion of each arm is disposed in an associated recess 34 in the back rest and its upper extremity is pivotally connected to the back rest as at 36. A part of the mid portion of each arm is disposed in an associated passage 24 and the lower portion of each arm extends into the interior of the seat frame, with its extremity pivotally connected as at 37 to the outside of the upright flange of the angle bar member 15 on the same side of the seat frame. As is obvious from Figs. 1 and 2, only a small part of the mid portion of each arm is visible to an observer and this small part is the part between the bottom of the back rest and the upper rear corner of the seat. By means of the arms, the back rest is capable of a forward and backward swinging movement relative to the seat between the full line and the dotted line positions appearing in Fig. 2.

This swinging movement of the back rest is cushioned and is limited in extent by means of a pair of telescoping braces 38, arranged entirely within the seat frame and therefore concealed thereby. Each brace may advantageously be of the kind shown either in my prior Patent 2,328,243 or in my prior Patent 2,329,673, or of other suitable construction.

As appears in Fig. 5, each brace includes a tubular body 39 that is flattened at one end and is there pivotally connected to its associated supporting arm 35 as at 40 at a point below the boxing 23. A bushing 41 is threaded on the other end of the tubular body 39 and a rod 42 has a sliding bearing through and in this bushing. That end of the rod 42 outside the bushing 41 is formed as an eye 43 and this eye is pivotally connected as at 44 to the inside of the upright flange of an associated member 15.

That portion of the rod 42, within the tubular body, has a nut 45 threaded thereon which backs up a washer 46 and between and abutting this washer and the bushing 41 is an expansion spring 47 which surrounds the major portion of the rod and is enclosed in the tubular body. The parts of the brace just mentioned appear in Fig. 5.

As the spring 47 is an expansion spring, it is obvious that the same tends to contract the brace in length and in this condition holds the back rest in its normal position appearing in full lines in Fig. 2. When a person occupies the chair, by sitting upon the seat thereof, this person's back may be pushed rearwardly to cause the back rest to swing to the dotted line position appearing in Fig. 2. In this movement of the back rest, the braces 38 elongate by compressing the springs 47. As soon as pressure on the back rest

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30 is released, the back rest returns to normal position.

As the cushion braces are disposed entirely within and are concealed by the seat frame, they are in no manner visible to the observer of the chair or the occupant. Only a minimum portion of the back rest supporting arms are visible to the observer and therefore the chair may be used in harmony with similar types of furniture.

While in describing the invention, I have referred in detail to the form, construction and arrangement of the parts involved therein, the same is to be considered only in the illustrative sense and therefore I do not wish to be limited thereto except as may be specifically set forth in the appended claims.

I claim as my invention:

1. A chair embodying therein a generally rectangular, open seat frame including front, rear and side rails, upholstery means covering the top of and operatively secured to said frame and forming the seat of the chair, there being a front to rear elongated slot-like passage through said upholstery means at the upper rear corner thereof adjacent each side of the seat that opens into the interior of said frame, a back rest at the rear of the seat, supporting arms for the back rest and disposed one at each side thereof and each operatively connected at its upper end to said back rest and each extending through an associated passage to dispose the lower portions thereof within the interior of said frame adjacent an associated side rail thereof, means pivotally connecting the bottom end portion of each arm to a part rigid with an associated side rail and whereby said back rest may be swung forwardly and rearwardly of the seat between two positions relative to the seat, and a resilient cushioning brace for each arm and disposed entirely within said frame and each pivotally attached to an associated arm and to an associated part rigid with the associated side rail of the frame and determining said two positions of the back rest.

2. A chair embodying therein a generally rectangular, open seat frame including front, rear and side rails, upholstery means covering the top of and operatively secured to said frame and forming the seat of the chair, there being a front to rear elongated slot-like passage through said upholstery means at the upper rear corner thereof, adjacent each side of the seat that opens into the interior of said frame, means providing an upright flange along and spaced inwardly from each side rail of the frame, a back rest at the rear of the seat, supporting arms for the back rest and disposed one at each side thereof and each operatively connected at its upper end to said back rest and each extending through an associated passage to dispose a portion thereof within the interior of said frame adjacent an associated upright flange, means pivotally connecting the bottom end portion of each arm to an associated upright flange and whereby said back rest may be swung forwardly and rearwardly of the seat between two positions relative to the seat, and a resilient cushioning brace for each arm disposed entirely within said frame and each pivotally attached to an associated arm and to an associated upright flange respectively for determining the two positions of the back rest.

3. A chair embodying therein a generally rectangular, open seat frame including front, rear and side rails of wood, upholstery means cover-

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ing the top of and operatively secured to said frame and forming the seat of the chair, there being a front to rear elongated slot-like passage through the upholstery means at the upper rear corner thereof, adjacent each side of the seat, that opens into the interior of the frame, a metallic angle bar frame fixed within and extending about the bottom of the front, rear and side rails of the seat frame, and arranged with its vertical flanges facing upwardly and with its horizontal flange at the bottom and facing inwardly of the seat frame, a back rest at the rear of the seat, supporting arms for the back rest and disposed one at each side thereof and each operatively connected at its upper end to said back rest and each extending through an associated passage to dispose the lower portion thereof within the interior of the seat frame adjacent an upright flange portion of said angle bar frame, means for operatively connecting the bottom end of the lower portion of each arm to an associated adjacent upright flange portion, and a

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brace associated with each arm and disposed entirely within the seat frame and operatively connected at its ends to an associated arm and upright flange portion respectively, a supporting base for the seat frame comprising a top rail and front and rear end legs, each top rail being engaged with and fixed to the horizontal flange of the angle bar frame along each side rail of the seat frame.

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