April 16, 1935. L. LARSEN 1,998,090

CHAIR

Filed Feb. 17, 1933

Fig. 1.

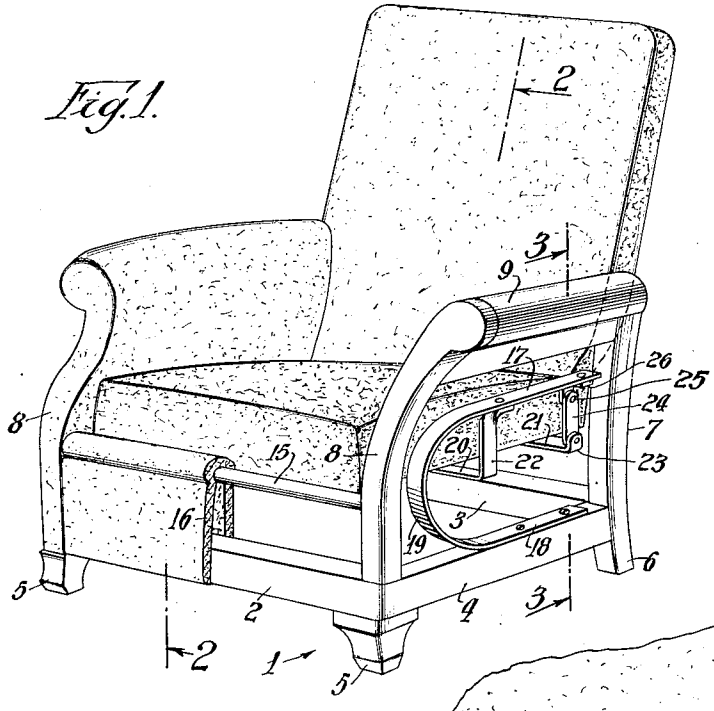
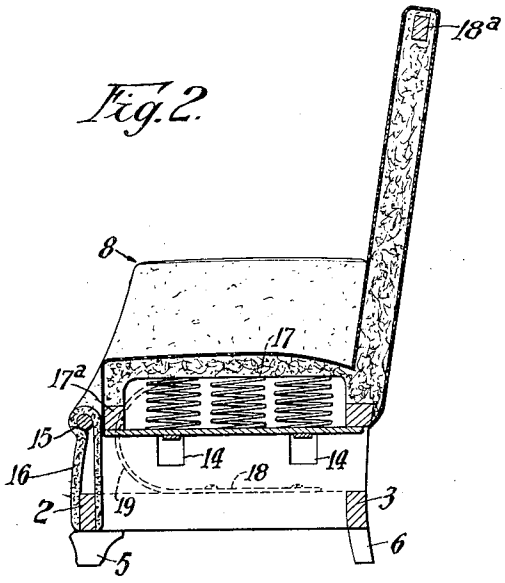


Fig. 2.



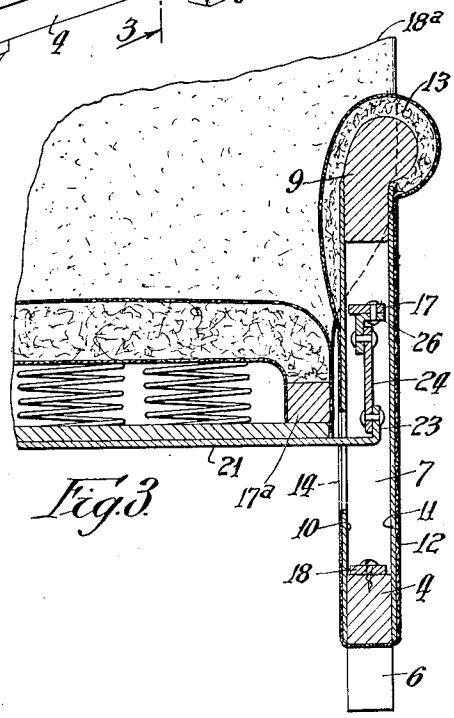


Fig. 3.

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1,998,090

CHAIR

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6 Claims. (Cl. 155—50)

This invention relates to improvements in chairs and it consists of the matters hereinafter described and more particularly pointed out in the appended claims.

In the manufacture of full upholstered furniture and especially chairs, more attention has been given to the appearance of the chair than to comfort for the occupant. Deep overstuffed cushions have been employed into which the occupant settles but such overstuffed cushions do not allow any easy shifting of the body of the occupant. Hence, the user soon becomes tired while seeking rest and relaxation. Again, such chairs do not permit of motion of the seat because the seat and back are usually fixed with respect to the chair frame. Thus it is impossible when a person becomes fatigued from sitting, to obtain a slight rocking action which will relieve the fatigue and restore the feeling of comfort.

One of the objects of the present invention is to provide a chair which shall have the appearance of a full upholstered chair and yet shall provide all the ease and comfort which a gentle rocking motion contributes.

Another object of the invention is to provide a chair of this kind wherein the seat and back are suspended in a manner permitting them to have a teetering or rocking action by means concealed in the side arms or rests, whereby all parts which would indicate that the chair was anything but a full upholstered chair, are concealed from view.

A further object of the invention is to provide a chair of this kind wherein the side arms or rests although upholstered, are hollow and contain the means whereby the seat and back are suspended as a unit for a yielding or teetering movement with respect to the chair frame.

The above mentioned objects of the invention, as well as the many advantages thereof, will more fully appear as I proceed with my specification.

In the drawing:

Fig. 1 is a perspective view of a chair embodying my invention, certain parts associated with one of the side arms being omitted to show more clearly the interior construction thereof;

Fig. 2 is a longitudinal vertical sectional view through the chair as taken on the line 2—2 of Fig. 1; and

Fig. 3 is a transverse vertical sectional view through one side of the chair on an enlarged scale as taken on the line 3—3 of Fig. 1.

In general, my improved chair includes a chair frame having an upstanding hollow arm rest at each side thereof. The seat and back, which are suitably upholstered, are made as a unit, and normally, parts of the side portions of the back engage the ends of the arm rests so as to fit snugly against the same.

Arranged within each hollow arm rest is a horizontally arranged U-shaped spring, with its bottom arm fixed to an associated side rail of the chair frame. Its top arm is spaced below the top rail of the arm rest a suitable distance so as to be capable of a flexing movement toward and away from the bottom arm.

Extending transversely across the bottom of the seat frame are front and rear straps having upturned ends which extend into the interior of both arm rests. The upturned ends of the front strap are secured to the top arms of both U-shaped springs, while the upturned ends of the rear strap also extend into each hollow arm rest and are there connected by links to the free end of the top arms of the U-shaped springs therein.

When the occupant of the chair sets up a teetering action, the seat and back, being suspended from the top arms of both U-shaped springs, will yield downwardly and upwardly with a teetering or rocking action, which promotes the ease and comfort of the occupant. In this connection, it is pointed out that the upholstered parts are so arranged that no rubbing action takes place between them to show wear on the nap thereof. Also the springs exert a lift on the seat and back to return them to that position wherein it is limited by the sides of the back engaging with the ends of the arm rests.

With such an arrangement the chair has the appearance of a full upholstered chair and therefore harmonizes with other articles with which it is used as a suite and at the same time is far more comfortable for the reasons stated.

Referring now in detail to that embodiment of the invention, illustrated in the drawing:

1 indicates as a whole the horizontally disposed frame of the chair which frame is substantially rectangular. The frame includes front and rear rails 2 and 3 respectively and side rails 4—4, only one of which appears in Fig. 1. Said frame is provided at its front and rear corners with pairs of feet 5 and 6 respectively. The feet 6 are formed by the bottom ends of substantially upright members 7 extending a suitable distance below the rear and side rails 3 and 4 respectively. Rising from the front corners of the chair frame are substantially upright members 8—8 that incline rearwardly toward their top ends. Each upright member 8 is connected at its top end to

the like end of an associated upright member 7 by an arm rest rail 9. The members 7 and 8 in connection with the rails 4 and 9 constitute arm rest frames, one at each side of the chair.

Each arm frame is provided upon its inner and outer sides with pieces of sheet material 10 and 11 respectively. Each frame with its said pieces of sheet material is covered with fabric 12 of any suitable kind. Between the fabric and the top rail 9 of each arm rest frame, a suitable filling 13 is provided to form an upholstered roll at the top of each arm rest frame, as is best shown at the left hand side of Fig. 1. It is apparent that by the construction described, each arm rest is hollow or contains a concealed compartment. In each inner piece of sheet material 10, front and rear openings 14 are provided, the purpose of which will soon appear.

The members 8 at each side of the chair frame are connected together, a suitable distance above the front rail 2, by means of a valance bar 15. The space between said bar and rail is closed by an upholstered valance piece 16 to provide a finish for the front of the chair frame.

17a indicates a seat frame and 18a indicates a back rest frame which are suitably connected together as a unit. The seat frame, which is suitably upholstered, is of a width approximating the distance between the inner sides of the arm rest frames. The back rest frame, which is also suitably upholstered, is so made as to be wider than the seat as shown in full lines in Fig. 1 and in dotted lines in Fig. 3. Thus lateral portions of the back rest are arranged to the rear of the rear ends of the arm rests. When the seat is tilted downwardly, these lateral portions of the back rest swing downwardly and rearwardly away from said rear ends of the arm rests but are brought forwardly and upwardly by the springs into contact with said arm rest ends and thereby act as stops to the further upward movement of the seat. Thus the upward swing of the seat through the action of the springs is limited by the engagement of said lateral portions of the back rest with the rear ends of the arm rests.

Within each arm rest between the inner and outer pieces of sheet material associated therewith, is a horizontally disposed U-shaped spring of flat cross section. This spring includes top and bottom arms 17 and 18 respectively which are connected at the front end by a rounded crotch or bend 19. The bottom arm of each spring engages and is suitably secured in place upon the top side of the associated side rail 4 of the chair frame. The top arm 17 of each spring is spaced a suitable distance below the rail 9 of the associated arm rest. As is apparent from Fig. 1, the top arm of said spring is capable of flexing up and down, within certain limits, because of the bend 19.

Extending transversely across the bottom of the seat frame, and secured thereto in any suitable manner, are front and rear straps 20 and 21 respectively. These straps are each of a length greater than the width of the seat frame so that the ends thereof extend through the openings 14 into the arm rests to terminate in the plane of each U-shaped spring therein.

Each end of the strap 20 is turned upwardly as at 22 and at that point has its extremity twisted to lie flat against and be secured to the underside of the top arm 17 of the associated U-shaped spring near the crotch or bend 19 thereof. Each end of the strap 21 is turned upwardly as at 23 and has pivoted thereto the bottom end of a link 24. The top end of each link is pivoted as at 25 to a clip 26 secured to the underside of the associated spring arm 17 near its rear and free end.

It is apparent from the above description that the seat and back are suspended as a unit from the arms 17 of the U-shaped springs arranged in the arm rest frames. Thus when the chair is occupied, the rear end thereof moves downwardly under the weight of the occupant and in this movement the back rest swings away from the ends of the arm rests. In this way, the occupant can cause a gentle teetering or rocking motion which in turn, induces relaxation and supplies comfort. As soon as the occupant leaves the chair, the springs act to return the parts to a normal position. While the chair embodies the above mentioned desirable mechanical features, yet it has the appearance of an ordinary full upholstered chair. Hence, it matches well with other articles of upholstered furniture.

It is apparent that the free end of the arm of each spring is more flexible than that end merging into the bend 19. This greater degree of flexibility is accommodated by the link arrangement mentioned. The parts are so arranged that the front bottom end of the seat normally engages behind, and slightly below the valance rail 15. Thus no substantial gap develops between the valance bar and seat in the rocking or teetering action of the seat and back rest.

While in describing the invention, I have referred in detail to the form, arrangement and construction of the various parts thereof, the same is to be considered merely as illustrative of one embodiment of the invention, so that I do not wish to be limited thereto except as may be necessary by limitations in the appended claims.

Also, the term "chair" in the specification and claims is to be construed as though it read chair or like article of furniture.

I claim as my invention:

1. A chair embodying therein a chair frame, an arm rest frame at each side of the chair frame, members for closing off each side of each arm rest frame, a horizontally disposed U-shaped spring arranged in each arm rest frame and each including top and bottom arms connected together at one end by a bend and one of said arms being fixed to a part of the chair frame, a seat arranged between said arm rest frames, a back rest associated with said seat, devices extending laterally from front and rear longitudinally spaced points of each side of the seat into each arm rest frame and there formed to provide upturned ends, means for operatively securing the upturned ends of the front devices, to the other arm of both springs and means including a link for operatively connecting the upturned ends of the rear device to said other arm of both springs.

2. A chair embodying therein a chair frame, an arm rest frame at each side of the chair frame, members for closing off each side of each arm rest frame, a horizontally disposed U-shaped spring arranged in each arm rest and each including top and bottom arms connected together at one end by a bend and one of said arms being fixed to a part of the chair frame, a seat arranged between said arm rest frames, a back rest associated with said seat, front and rear transverse straps secured to the underside of the seat and extending beyond each side thereof and into an associated arm rest, said straps within said arm rest frames being formed to provide up-

turned ends, and means for operatively connecting the upturned ends of both straps with the other arms of said springs, the means operatively connecting the ends of one of said devices and spring arms including a link.

3. An upholstered chair or like article of furniture embodying therein a frame, a hollow upholstered arm rest at each side of the frame, an upholstered seat arranged between said arm rests, a horizontally disposed, substantially U-shaped spring in each hollow arm rest and including a yieldable arm extending longitudinally thereof, means for operatively connecting each side of the seat with an associated arm so that said seat may tilt rearwardly when under a load, and an upholstered back rest connected to the seat to move therewith, said back rest in the tilting of the seat having a movement with respect to the arm rests and being formed with portions to engage the rear ends of the arm rests to limit the tilting of the seat in one direction.

4. An upholstered chair or like article of furniture embodying therein a frame, a hollow upholstered arm rest at each side of the frame in the plane of one of the side members thereof, an upholstered seat arranged between said arm rests, a horizontally disposed, substantially U-shaped spring arranged in each arm rest and each including top and bottom arms connected together by a bend, means securing the bottom arm of each spring to an associated side member of the frame, an upholstered back rest connected to the seat to move therewith, and means for operatively connecting each side of the seat with an associated top arm so that said seat may tilt rearwardly under load, said back rest having portions arranged in the plane of portions of the arm rests to engage therewith to limit the tilting of the seat in one direction.

5. A chair embodying therein a chair frame, an arm rest frame at each side of the chair frame, a U-shaped spring arranged in each arm rest frame and each including top and bottom arms connected together at one end, one arm of each spring being secured to an associated part of the chair frame, a seat arranged between the arm rest frames, devices having ends extending laterally from front and rear longitudinally spaced points at each side of the seat into the associated arm rest frame, means for operatively securing the ends of the front device to the other arm of both springs and means depending from the rear end of said other arm of both springs and engaged with the ends of the rear device so as to provide a pivotal connection therebetween.

6. A chair embodying therein a chair frame, a U-shaped spring arranged at each side of the chair frame and each including top and bottom arms connected together at one end, one arm of each spring being secured to an associated part of the chair frame, a seat arranged between said springs, devices having ends extending laterally from front and rear longitudinally spaced points of each side of the seat, means for operatively securing the ends of the front devices to the other arm of both springs, and means depending from the rear end of said other arm of both springs and engaged with the ends of the rear device so as to provide a pivotal connection therebetween.

LEWIS LARSEN.