

Oct. 19, 1943.

W. McARTHUR

2,331,990

CHAIR CONSTRUCTION

Filed June 28, 1940

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Fig. 2.

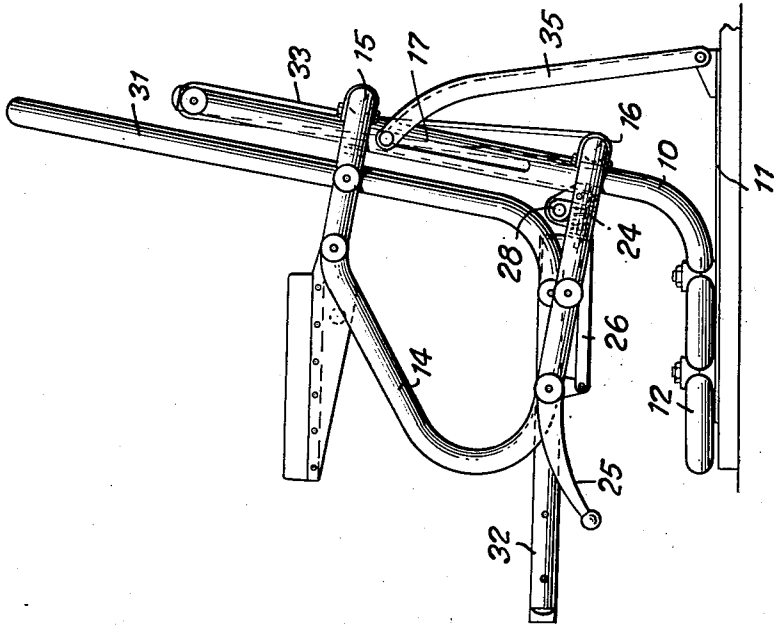
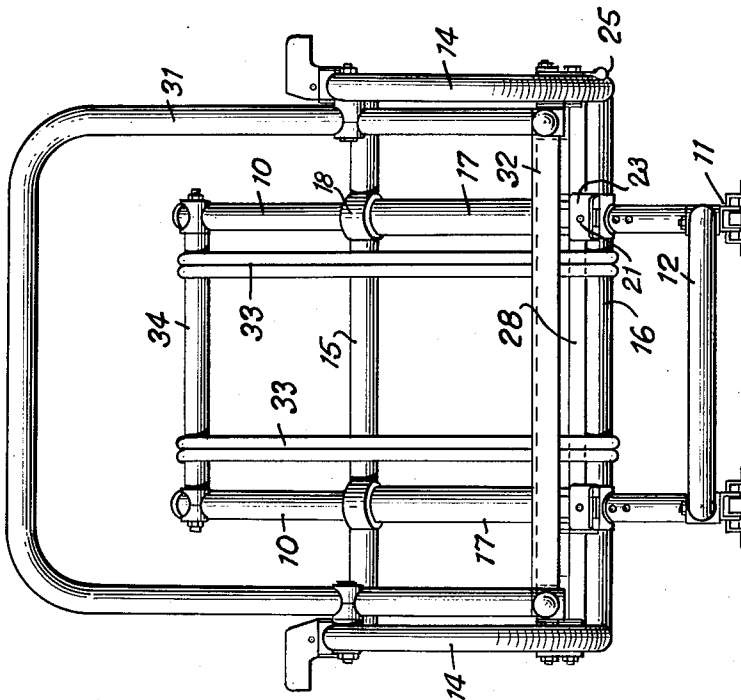


Fig. 1.



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Fig. 4.

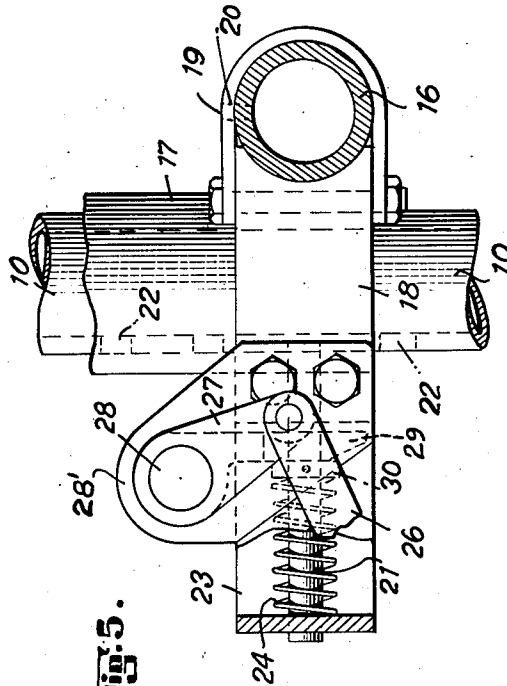
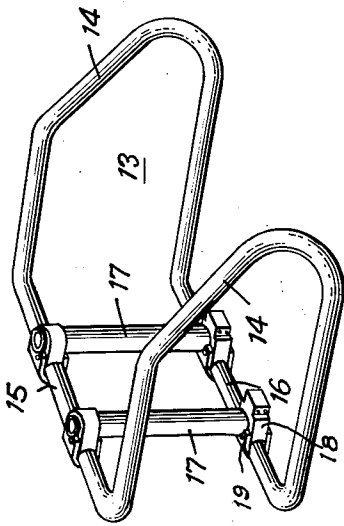
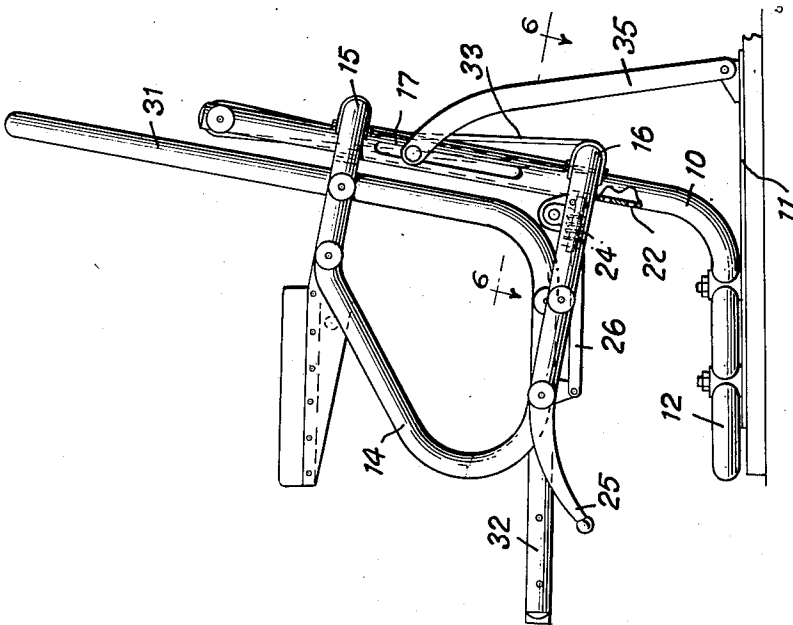


Fig. 5.

Fig. 3.



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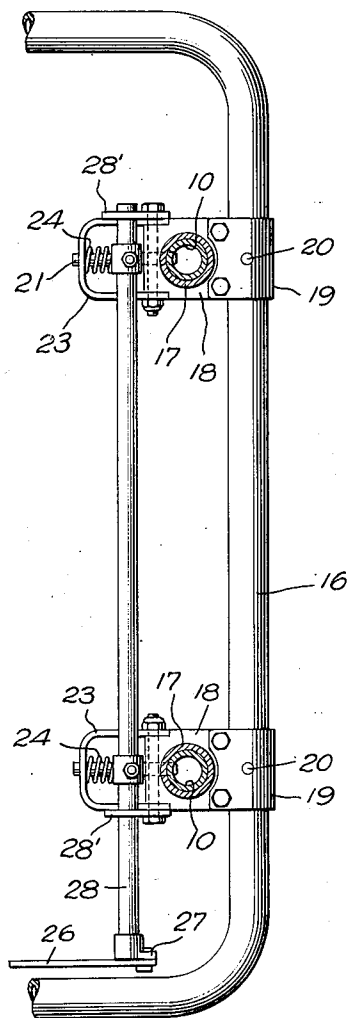
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Fig. 6.



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UNITED STATES PATENT OFFICE

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CHAIR CONSTRUCTION

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Application June 28, 1940, Serial No. 342,929

4 Claims. (Cl. 155—88)

This invention relates to chairs or seats and an object is to provide a chair particularly adapted for airplane use.

A further object is to provide a chair of this type constructed and arranged to resist the unusual stresses and strains to which an airplane chair is subjected while at the same time permitting the use of very light weight material in its manufacture.

These and other objects which will be apparent to those skilled in the art are accomplished by this invention, one embodiment of which is shown in the accompanying drawings, in which.

Figure 1 is a front elevation of a chair frame constructed in accordance with one embodiment of this invention,

Figures 2 and 3 are side elevations thereof, showing the vertical adjustability of the seat frame,

Figure 4 is a perspective showing certain details of construction,

Figure 5 is a partial sectional view of the locking mechanism, and

Figure 6 is a sectional view on the line 6—6 of Fig. 3.

The illustrated embodiment of my invention is shown in the drawings as formed of hollow tubes for light weight, and this is the preferred construction although it will be apparent that various features of the invention are equally adapted to other forms of structural members.

The invention comprises a base frame member including a pair of spaced stanchions, and a seat carrying frame or carriage which is supported and vertically adjustable on the spaced stanchions. The seat supporting carriage includes a pair of elongated sleeves rigidly secured to the carriage and slidably mounted on the stanchions which are in turn securely anchored to the floor or the like. The sleeve connection between the rigid seat frame and the securely anchored stanchions prevents any distortion of the parts due to side stresses resulting, for example, from tilting or banking of a plane in flight.

As illustrated, spaced supporting stanchions are secured to spaced elongated supports adapted to be mounted on tracks for horizontal adjustment in any desired manner. The stanchions are preferably tubular and may be separate members or may, as illustrated, be formed from a single tube of U-shape bent to form a horizontal base portion. If separate members, each stanchion is independently secured to one of the supports.

The seat supporting frame or carriage is

preferably formed from a single tube bent to provide side members 14, an upper rear transverse frame member 15, and a lower rear transverse frame member 16. The upper and lower cross members are connected by and rigidly secured to spaced sleeves 17 slidably mounted on the supporting stanchions 10. Each end of each sleeve is rigidly secured in a bore formed in a tube-securing block 18 which has a groove to receive the adjacent cross frame member or tube 15 or 16 secured therein by a strap 19 bolted to the block, see Figure 5. For additional rigidity a pin 20 extends through the strap and cross member to prevent rotation of the tubular member relative to the clamping block.

It will be apparent that the seat carriage and connected sleeve members form a structural unit which is movable vertically on the stanchions. Any suitable device for locking the carriage at different heights can be employed. That shown consists of a pin 21 extending through an opening in a lower block 18 and adapted to enter perforations 22 in the adjacent face of the associated stanchion. The pin is mounted in a bracket 23 secured to the block 18 and pressed inwardly by spring 24. It can be retracted to permit movement of the carriage by a hand lever 25 connected by link 26 to crank arm 27 on rocker shaft 28 supported in a bracket 28' at each end. A fork 29 or the like engages a collar 30 on the locking pin 21. Obviously, lifting the handle 25 retracts pin 21 to permit the seat carriage to be raised or lowered on the stanchions, while release of the handle permits the spring 24 to impel the pin into locking position in a perforation in the stanchion. Preferably a lock is provided on each sleeve. As shown the rocker shaft 28 extends across the carriage to actuate both pins and is similarly supported at each end.

Any type of seat and back frame or frames can be mounted on the seat carriage 13. The drawings show a back frame 31 and a seat frame 32, the detailed construction of which forms no part of this invention.

If desired, means such as elastic cords 33 between a cross member 34, which connects the upper ends of the stanchions 10, and the cross member 16 of the seat carriage can be employed to lift the carriage upon release of the locking pins. When occupied the weight of the occupant will move the carriage downwardly when the pins are released.

The construction is such as will provide a strong, rigid construction even with light weight structural members of tubular form. It will be

apparent from Figure 4 that the rectangular formation provided by the seat carriage and supporting sleeves provides a positive lock against any distortion by side strains resulting, for example, from banking of a plane in flight. The stanchions being securely anchored to the base no deformation of the frame structure is possible short of actual collapse of a structural member.

It will be apparent that the invention can be variously modified and adapted within the scope of the appended claims.

I claim:

1. A chair construction comprising a pair of supporting stanchions, a seat carrying frame formed by a single tubular member bent to provide spaced side members connected by upper and lower transverse frame members all formed by said tubular member, frame supporting sleeves slidably mounted on said stanchions, means for rigidly securing said transverse frame members to said sleeves, and means for supporting said sleeves at any one of a plurality of points on said stanchions.

2. A chair construction comprising a tubular base frame including a pair of tubular supporting stanchions, a seat carrying frame formed by a single tubular member bent to provide spaced side members connected by upper and lower transverse frame members all formed by said tubular member, a frame supporting sleeve slidably mounted on each stanchion, means for rigidly securing said

transverse frame members to said sleeves, and means for supporting said sleeves on said stanchions.

3. A chair construction comprising a base frame formed by a U-shaped member bent to form a horizontal base portion and spaced upwardly extending stanchions, a seat carrying frame formed by a second member bent to provide spaced side members and integral upper and lower transverse frame members connecting said side members and all formed by said second member, seat frame supporting sleeves slidably mounted on said stanchions, means rigidly securing said upper and lower transverse frame members to spaced points on said sleeves, and means for supporting said sleeves on said stanchions.

4. A chair construction comprising a base frame formed by a tubular member of U-shape bent to form a horizontal base portion and spaced upwardly extending stanchions, a seat carrying frame formed by a second tubular member bent to provide spaced side members and vertically spaced upper and lower transverse frame members connecting said side members and all formed by said second tubular member, seat frame supporting sleeves slidably mounted on said stanchions, means rigidly securing said upper and lower transverse frame members to vertically spaced points on said sleeves, and means for supporting said sleeves on said stanchions.

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