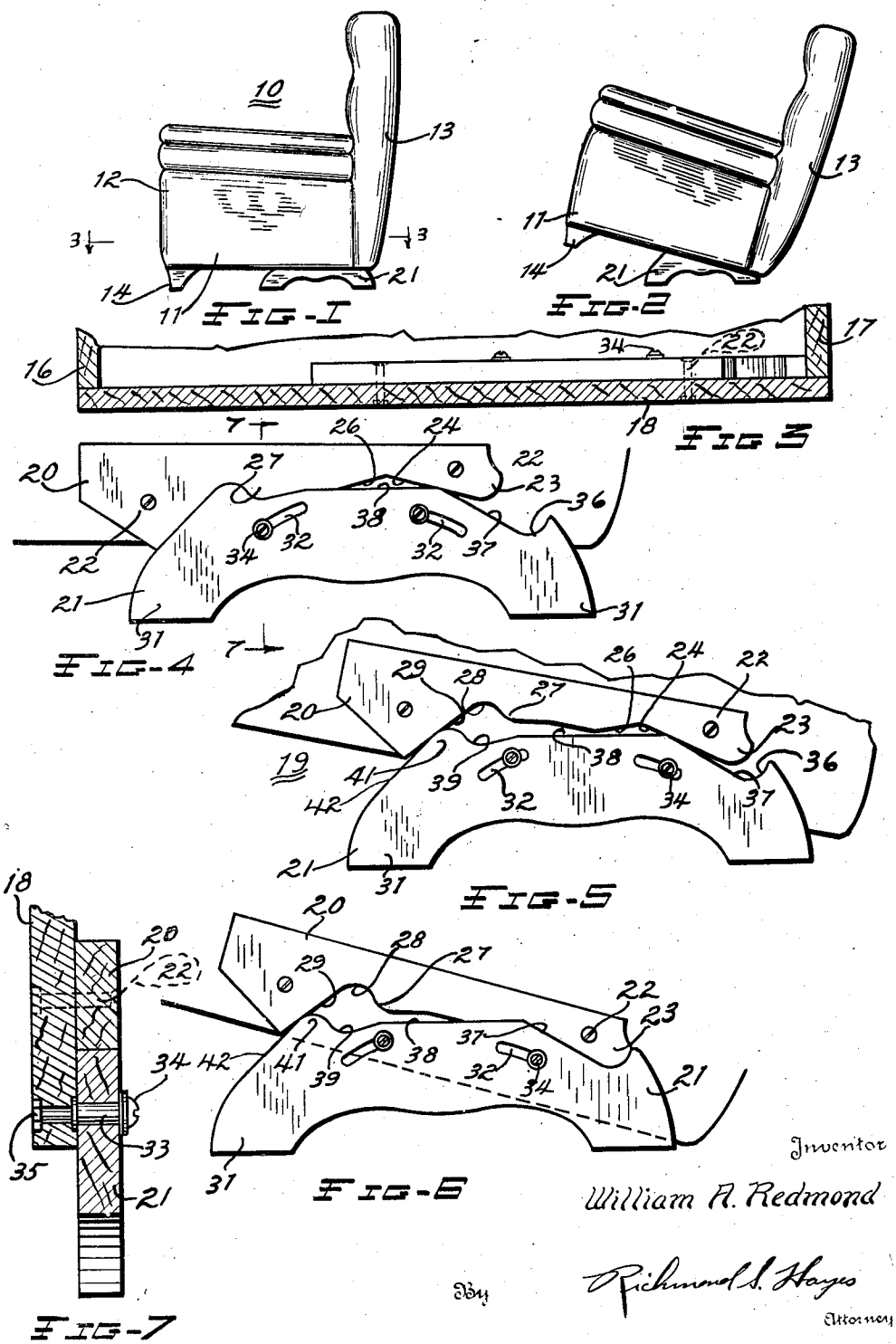
June 17, 1941. W. A. REDMOND 2,245,713

RECLINING CHAIR

Filed April 29, 1938



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Patented June 17, 1941 2,245,713

UNITED STATES PATENT OFFICE

2,245,713

RECLINING CHAIR

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Application April 29, 1938, Serial No. 205,053

2 Claims. (Cl. 155—57)

This invention relates to an improvement in chairs, seats or benches and more particularly to a base support and tilting device therefor.

One form of the invention is disclosed applied to a reclining chair and serves to support and facilitate tilting the chair from one position to another. Within certain prescribed limits any desired change in incline of the chair is easily made by a shift of weight of the occupant. When the chair is in a desired position, that is, fully upright or tilted, or at any position therebetween, it will not readily shift to another position as a result of ordinary movement of the occupant.

The invention is primarily directed and has for its principal object the provision of a device that may be attached to or formed integral with any generally non-adjustable chair, bench or seat for the purpose of providing limited tilting thereof.

Another object of the invention lies in the provision of a device of this class which has a locking effect in the upright or fully tilted position of the chair.

Another object of the invention lies in the provision of a tilting device of this class in which relatively movable interfitting friction surfaces serve to mount the chair and facilitate adjustment to any desired position within certain prescribed tilting limits, these surfaces being held in the desired position solely by the weight of the chair and occupant.

Another object of the invention lies in the provision of a device of this class in which the ease of adjustment of a chair from one position to another is governed entirely by the chair and occupant weight or the area of contact of the relatively movable friction surfaces of the device.

Another object of the invention lies in the provision of a device of this class which may be located forwardly or rearwardly of a chair for the purpose of varying the limit of tilt or incline.

Another object of the invention lies in the provision of a device of this class having inclined frictionally engaged relatively movable surfaces, the relative angularity of which serves to control the limit and degree of tilt of the chair.

Other and further objects and advantages of the invention will be more fully understood from a consideration of the following specification, taken in conjunction with the accompanying drawing, in which

Fig. 1 is a side elevation of a conventional chair in upright position, being fitted with one modification of the present invention;

Fig. 2 is a side elevation of the structure of Fig. 1, showing the chair in fully tilted position;

Fig. 3 is an enlarged fragmentary plan view of the lower frame of the chair, showing the location of the invention, being taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged side elevation of the members which comprise the chair support and tilting device, being shown in the forward or upright chair position;

Fig. 5 is a view of the members of the device in an adjusted position to partially tilt the chair;

Fig. 6 is a further view of the members of the device showing them in a position to fully tilt the chair; and

Fig. 7 is an enlarged transverse sectional view of the device, taken substantially on the line 7—7 of Fig. 4.

Reference is now had to the drawing wherein the numeral 10 is employed to generally indicate any type of chair, seat or bench to which the present combined supporting and tilting device may be applied.

In the present disclosure, the chair 10 includes a base or frame portion 11, seat 12, and back 13. If the chair is of considerable proportions, it may be found convenient to provide front legs or supports, 14. The base 11 in the present chair modification is shown to comprise front and rear rails 16 and 17 and side rails 18. These rails are made integral in any conventional manner.

A supporting and tilting device 19 is attachable to any chair having a base similar to base 11 of chair 10, and comprises a pair of members 20 and 21. The member 20 is secured by bolts or screws 22 to the inner face of the rail 18. In the present disclosure the member is of a thickness comparable to that of the rail 18, but it will be understood that it may be varied as required in the application of the device to other types of chairs. The lower edge of the member 20 is formed with what may be termed a friction surface. This surface commencing at the rear of the member comprises a rounded portion 23 that is continued in an upwardly inclined surface 24. Meeting the surface 24 is a downwardly inclined surface 26 that terminates in a projection 27. Forwardly of the projection 27 is a downwardly opening pocket 28, one wall of which is continued in an inclined surface 29.

The member 21 of the device is formed at opposite ends with a pair of legs or supporting portions 31. A pair of arcuate slots 32 are made transversely of the central portion and serve to accommodate the shank portions 33 of bolts 34,

Bolts 34 project through the rail 18, being secured by nuts 35. From the foregoing it will be understood that the member 21 has limited movement relative to the rail 18. The upper edge of the member 21 is formed with a friction surface that, commencing at the rear of the member, comprises an upwardly opening pocket 36 that corresponds to and is adapted to receive the portion 23 of the member 20. One wall of the pocket 36 is continued upwardly to form an inclined surface 37. The surface 37 terminates in a generally horizontal portion 38 which, towards the front of the member, slopes slightly downwardly to form an upwardly opening pocket 39. Directly forwardly of the pocket 39 is an upstanding projection 41 which terminates at the forward end of the member in a downwardly inclined surface 42.

Before describing the operation of the device attention is directed to the fact that surfaces 37 and 42 are of a different pitch and that by further varying this pitch the extent of tilt of the upper member 20, as it moves forwardly or backwardly with respect to the member 21, is thereby increased or decreased, as the case may be. When pairs of members 20 and 21 are secured to opposite side rails 18 of a chair, the chair may be tilted from the position of Fig. 1 to that of Fig. 2. When the chair is in an upright or extreme tilted position it will be noted there is a definite interengagement of the friction surfaces of the members 20 and 21.

Referring to Fig. 4 it will be noted that projection 41 lies in pocket 28 and projection 27 in pocket 39. This interengagement serves as a stop to limit forward movement of the chair. As the chair is tilted rearwardly, the member 20 moves through an arc with respect to the member 21 that is determined by the curvature of slots 32. Surface 29 of the member 20 slides upwardly over the projection 41. The inclined surface 24 of the same member moves downwardly from the point formed by the meeting of surfaces 37 and 38 until it contacts surface 37 throughout its length and the projection 23 of the member 20 engages the pocket 36. When this position of the members has been reached (see Fig. 6) the chair is fully tilted.

It will be understood that when the present device is applied to chairs of different size, weight, and construction, certain parts of the members 20 and 21 will necessarily be altered. For example, if the chair is very light weight it may be found desirable to utilize a spring in connection with the bolts 34 for the purpose of providing better frictional engagement as between the member 21 and rail 18. It may also be desirable to increase the tilting limit of the chair and this is accomplished by changing the incline of either surface 37 or 42 and changing one of the surfaces of the member 20 to correspond. It will be apparent that when the device is located more nearly centrally than rearwardly of a chair such as is shown in the drawing, the extent of tilt will be less than as if the device was located at the extreme rear of the chair. Furthermore, it is contemplated that a pair of members 21 may constitute the entire supporting means for the chair and may be secured to a floor. With this structure in mind the invention is fully applicable to seats or chairs of the type commonly used in buses, Pullman cars, and airplanes.

Although applicant has shown and described only one modification of his invention and its application to a particular type of chair, it will be understood by those skilled in the art that other modifications or adaptations may be made and are contemplated insofar as they are within the spirit and scope of the invention as defined in the hereunto annexed claims.

Having thus set forth my invention what I claim as new and for which I desire protection by Letters Patent is:

1. In a tilting device for a chair, a pair of relatively slidable members, one superposed on the other, the contacting surfaces of said members being of irregular contour and having substantially only point-like contact intermediate the extreme adjusted positions of said members and interengageable means on said members adjacent at least one end of said surfaces, said means when interengaged providing a relatively large area of contact of said surfaces.

2. In a tilting device for a chair, a pair of superposed members, frictional contacting surfaces on said members, said members being relatively slidable in the direction of their length, certain portions of said contacting surfaces of said members being complementary and adapted to interfit in either of two longitudinally adjusted positions whereby to limit and determine the extent of relative slidable movement of said members.

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