

Oct. 21, 1924.

S. C. EDDY

1,512,834

ADJUSTABLE CHAIR

Filed Feb. 13, 1922.

2 Sheets-Sheet 1

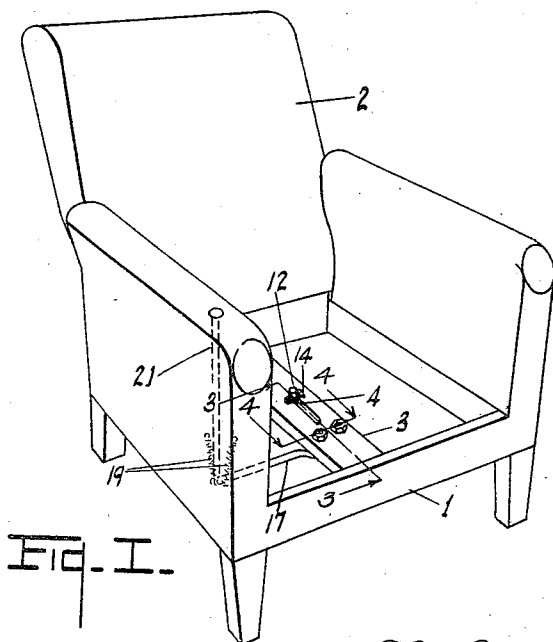


FIG. I.

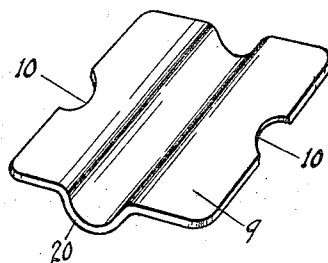


FIG. V.

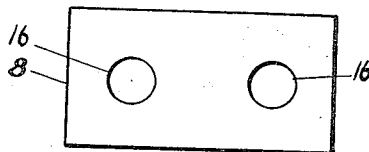


FIG. VI.

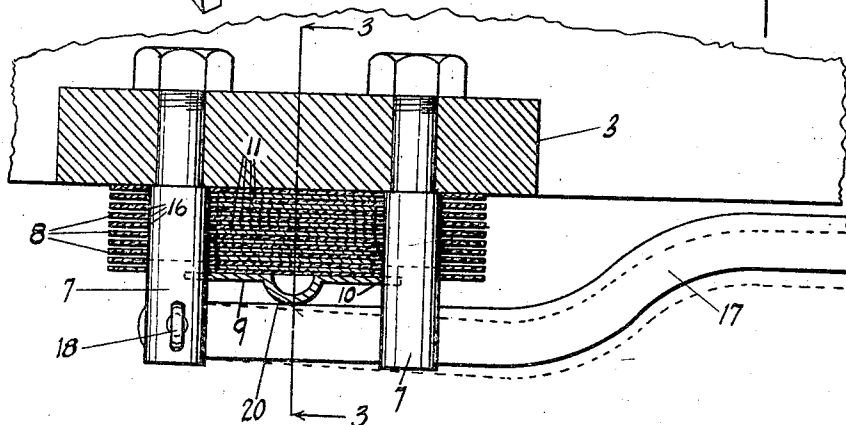


FIG. IV.

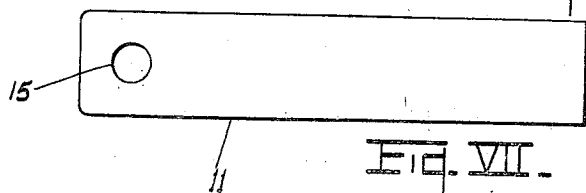


FIG. VII.

INVENTOR.

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ATTORNEYS

Oct. 21, 1924.

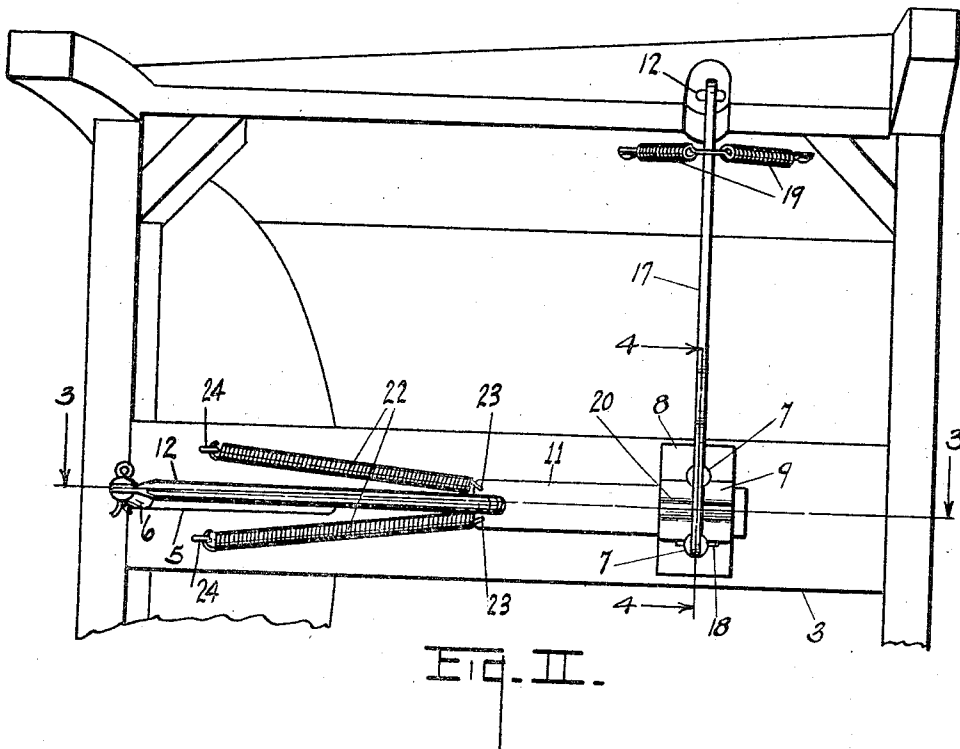
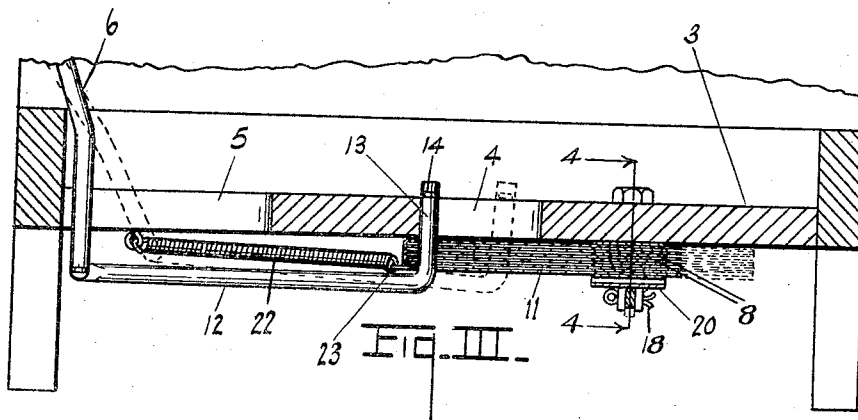
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ADJUSTABLE CHAIR

Filed Feb. 13, 1922

2 Sheets-Sheet 2



INVENTOR.
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Patented Oct. 21, 1924.

1,512,834

UNITED STATES PATENT OFFICE.

SCHUYLER C. EDDY, OF KALAMAZOO, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO ROYAL EASY CHAIR CORPORATION, OF STURGIS, MICHIGAN.

ADJUSTABLE CHAIR.

Application filed February 13, 1922. Serial No. 536,079.

To all whom it may concern:

Be it known that I, SCHUYLER C. EDDY, a citizen of the United States, residing at the city and county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Adjustable Chairs, of which the following is a specification.

This invention relates to improvements in adjustable chairs.

My improvements are especially designed by me and I have illustrated the same as embodied in adjustable chairs of the "Morris" type, although my improvements are desirable and readily adapted for use in other types of chairs or in very considerably modified forms or embodiments.

The main objects of the invention are:

First, to provide an improved means which adjustably and effectively supports the back in any position throughout its range of adjustment.

Second, to provide in an adjustable chair an improved means for adjustably supporting the back which is very easily operated and is noiseless in operation.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. I is a front perspective view of a chair embodying the features of my invention with the seat of the chair omitted in order to better show the structural features.

Fig. II is a fragmentary inverted view.

Fig. III is a detail vertical section from front to rear on a line corresponding to line 3—3 of Figs. I, II and IV, parts being shown in full lines for convenience in illustration.

Fig. IV is an enlarged detail view partially in section on a line corresponding to line 4—4 of Figs. I, II and III.

Fig. V is a top perspective view of the thrust plate of the clutch.

Fig. VI is a plan view of one of the relatively fixed thrust members.

Fig. VII is a plan view of one of the sliding thrust members.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, 1 represents the main frame of a chair and 2 the back which is hinged or adjustably connected to the frame. The details of this hinge connection are not illustrated as they form no part of this invention. The details of the frame are not illustrated as they likewise form no part of my present invention.

The frame is provided with a horizontally disposed bar 3 extending from the front to rear thereof, the bar having longitudinal slots 4 and 5 therein. The back is provided with a downwardly projecting arm 6 which extends through the slot 5 with its rear end below the bar. A pair of posts 7 are mounted on the bar to project downwardly, these posts being arranged in spaced relation and their lower ends being slotted.

On these posts I mount a plurality of friction clutch plates 8, preferably of fiber board or like fibrous material. These plates are supported upon the posts by the thrust plate 9 which is notched at 10 to engage the posts, thereby laterally supporting the plate.

I provide a plurality of thrust plates 11 which are disposed between the posts 7 and interposed with the plates 8, being slidable transversely thereof. These sliding plates are preferably of metal, sheet metal stampings being satisfactory, and are connected by the link 12 to the lower end of the arm 6, the link having an upwardly projecting arm 13 laterally engaged with the plates and engaged with the slot 4 of the bar 3 by which the link is laterally supported and guided. A cotter pin 14 through the upper end of the link supports it in position.

The plates 11 have holes 15 therein of such size that they engage the offset 13 of the link without binding action. The holes 16 in the plates 8 are of such size that they engage the posts 7 without binding action.

Pressure is applied to the clutch plates by means of the lever 17 which is pivoted at 18 in the slot of one of the posts and lies in the slot of the other post, as shown in Fig. IV.

The springs 19 are connected to the outer end of this lever to actuate the same and through it apply pressure to the clutch

plates, thus actuating the clutch. The thrust plate 9 has a central offset 20 which is engaged by the lever, thus centering the pressure on the clutch plates.

5 A push rod 21 is connected to the outer end of the lever 17, the push rod being disposed in one of the arms of the chair for convenience in manipulation.

To automatically return the back to its upright position when the clutch is released, I provide a pair of return springs 22 which are connected to one of the sliding clutch plates at 23 and to the under side of the bar 3 at 24.

15 With this arrangement of parts I provide a mechanism which is very economical in its parts, effectively supports the back in any adjusted position between its extremes, is substantially silent or noiseless in operation and may be very easily released to permit the movement of the back.

I have illustrated and described my improvements in an embodiment which I have found very practical. I have not attempted to illustrate or describe certain adaptations or modifications which I contemplate as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a chair, the combination of a frame having a longitudinally slotted bar disposed from front to rear thereof; a back hinged to said frame and provided with an arm projecting below said bar, a pair of spaced downwardly projecting slotted posts on said bar, a plurality of relatively fixed clutch plates loosely mounted on said posts, a plurality of sliding clutch plates interposed with said relatively fixed clutch plates, a link connecting the lower end of said arm to said sliding clutch plates, said link being provided with an upturned end loosely engaging said sliding clutch plates and slidably supported in said slot in said bar, a thrust plate disposed between and notched to engage said posts, a lever pivoted in the slot of one of said posts and engaged in the slot of the other, said thrust plate having a central offset engaged by said lever, a clutch actuating spring connected to the outer end of said lever, and a releasing push rod connected at the outer end of said lever.

2. In a chair, the combination of a frame having a longitudinally slotted bar disposed from front to rear thereof, a back hinged to said frame and provided with an arm projecting below said bar, a pair of spaced posts on said bar, a plurality of relatively fixed clutch plates loosely mounted on said posts, a plurality of sliding clutch plates interposed with said relatively fixed clutch

plates, a link connecting the lower end of said arm to said sliding clutch plates, said link being provided with an upturned end loosely engaging said sliding clutch plates and slidably supported in said slot in said bar, a thrust plate disposed between and notched to engage said posts, a lever pivoted on one of said posts to engage said thrust plate, a clutch actuating spring connected to the outer end of said lever, and a releasing push rod connected to the outer end of said lever.

3. In a chair, the combination of a frame, a back adjustably mounted on said frame, a pair of spaced posts on said frame, a plurality of relatively fixed clutch plates loosely mounted on said posts, a plurality of sliding clutch plates disposed between said posts and interposed with said relatively fixed clutch plates, operating connections for said back to said sliding clutch plates including a link loosely engaging said plates, a thrust plate disposed between and notched to engage said posts, an actuating lever pivoted on one of said posts to engage said thrust plate, a clutch actuating spring connected to said lever, and a releasing means for said lever.

4. In a chair, the combination of a frame, a back adjustably mounted on said frame, a pair of spaced posts on said frame, a plurality of relatively fixed clutch plates loosely mounted on said posts, a plurality of clutch plates slidable between said posts and disposed in alternating relation between said relatively fixed clutch plates to coact therewith, operating connections for said back to said slidable clutch plates, a clutch actuating means comprising a thrust plate disposed between and notched to engage said posts, and means for applying pressure to said thrust plate to increase the friction between said clutch plates.

5. In a chair, the combination with a frame and an adjustable back, of means for adjustably supporting said back comprising a plurality of relatively fixed clutch plates mounted on said frame, a plurality of coacting clutch plates disposed in alternating relation between said relatively fixed plates for sliding movement and operatively connected to said back, means for applying pressure to said clutch plates to increase the friction, and means for releasing such pressure.

6. The combination in a chair comprising a frame and an adjustable back, of a plurality of friction clutch plates mounted on said frame, a plurality of sliding clutch plates disposed in alternating relation between said plates mounted on said frame and operatively connected to said back, means for applying pressure to said clutch plates including a lever mounted to coact with said plates, a spring for actuating said lever, and

a push rod for releasing said lever against the tension of said spring.

7. The combination of a chair comprising a frame and an adjustable back, of a plurality of friction clutch plates mounted on said frame, a plurality of sliding clutch plates disposed in alternating relation between said friction plates mounted on said frame and operatively connected to said back, means for applying pressure to said thrust plates to increase the friction between them, and means for releasing such pressure to permit the movement of the sliding clutch plates.

8. In a chair, the combination with a frame and an adjustable back, of means for adjustably supporting said back comprising a clutch consisting of a plurality of relatively fixed clutch plates of fiber mounted on said frame, a plurality of sliding plates of metal disposed in alternating relation with said fiber plates and connected to said back, a spring for applying pressure to said clutch plates, and a manually controlled means for releasing said clutch.

9. In a chair, the combination with the frame and an adjustable back, of means for adjustably supporting said back comprising a clutch consisting of a plurality of relatively fixed clutch plates mounted on said frame, a plurality of sliding clutch plates disposed in alternating relation with said fixed clutch plates, an operating connection for said sliding clutch plates to said back comprising a link having a laterally turned end loosely engaging said sliding clutch

plates, means for applying pressure to said thrust plates to increase the friction between them, and means for releasing such pressure to permit the movement of the sliding clutch plates.

10. In a chair, the combination with a frame and an adjustable back, of means for adjustably supporting said back consisting of a set of relatively fixed clutch plates, a set of sliding plates interposed with said relatively fixed plates, one of said set of plates being of fibrous material and the other of metal, the relatively fixed plates being mounted on said frame and the sliding plates operatively connected to said back, a clutch actuating lever, a clutch actuating spring connected to said lever for applying pressure to said clutch plates to increase the friction, and a push rod connected to the outer end of said lever.

11. In a chair the combination with a frame and an adjustable back, of means for adjustably supporting said back comprising a plurality of relatively fixed clutch plates of fiber mounted on said frame, a plurality of coacting clutch plates of metal disposed in alternating relation between said fiber clutch plates and sliding movement and connected to said back, means for applying pressure to said clutch plates to increase the friction, and manually operated means for releasing such pressure.

In witness whereof, I have hereunto set my hand and seal.

SCHUYLER C. EDDY. [L. S.]