M. L. CROMER.

ADJUSTABLE CHAIR.

APPLICATION FILED DEC. 1, 1911.

1,028,548.

Patented June 4, 1912.

2 SHEETS—SHEET 1.

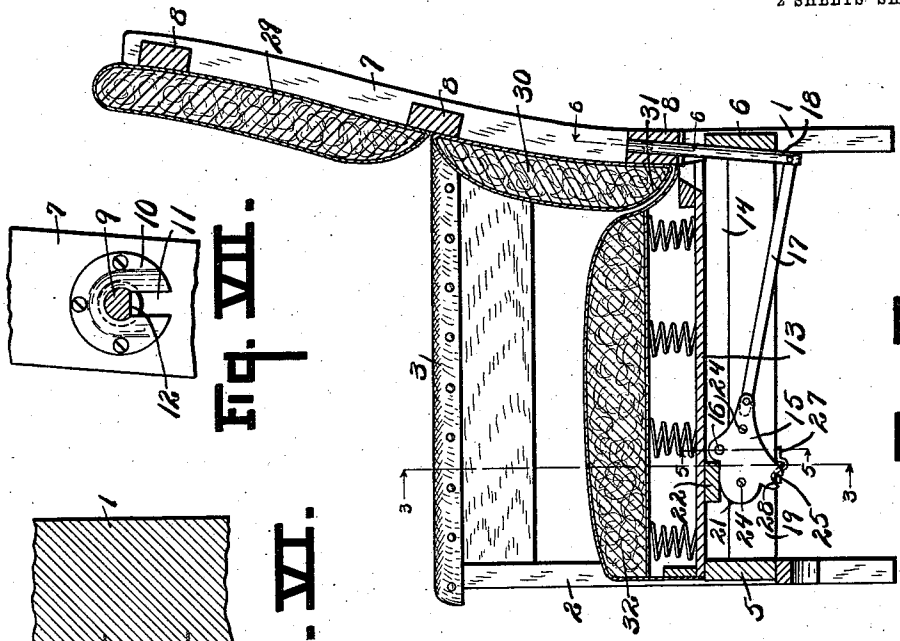

Fig. II.

Fig. VII.

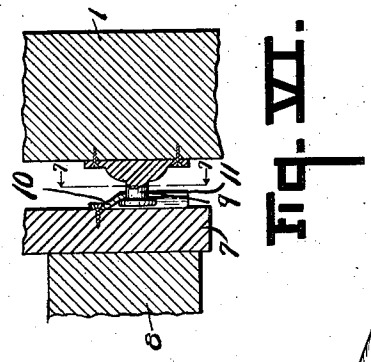

Fig. VI.

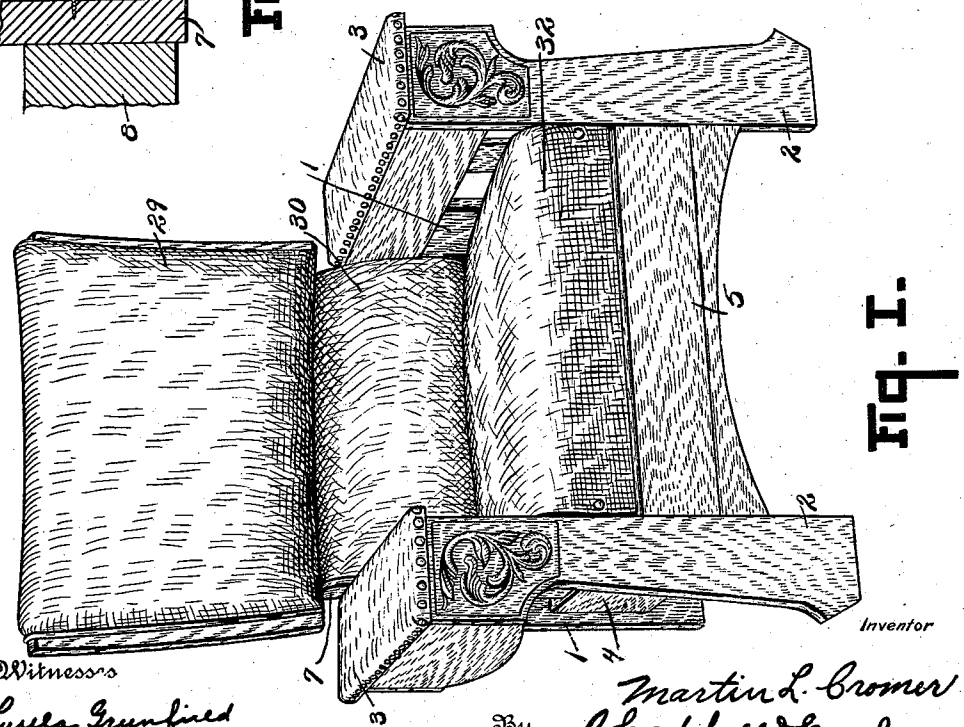

Fig. I.

Witnesses

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2 SHEETS—SHEET 2.

Fig. III.

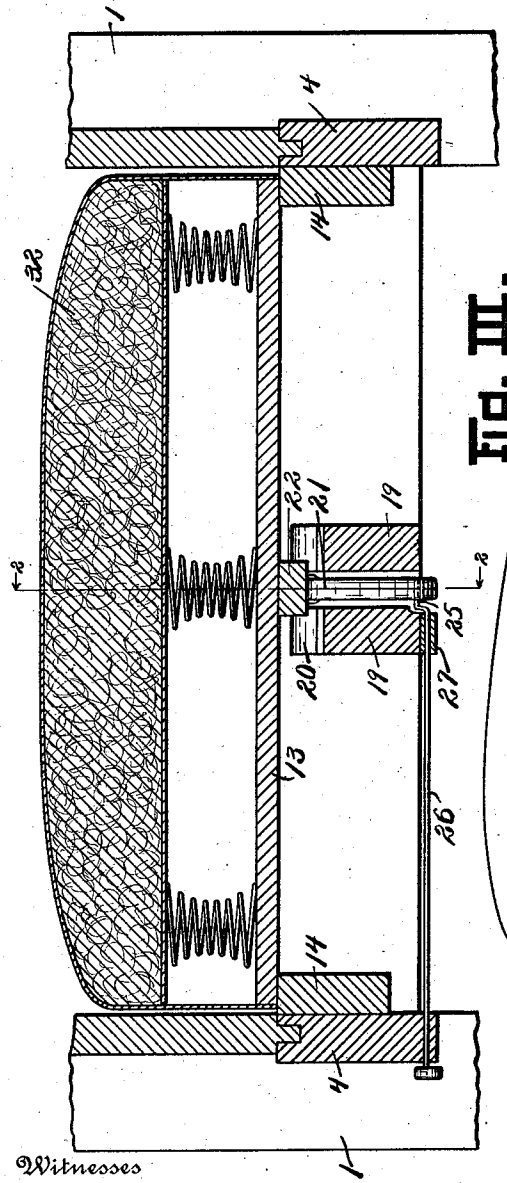

Fig. V.

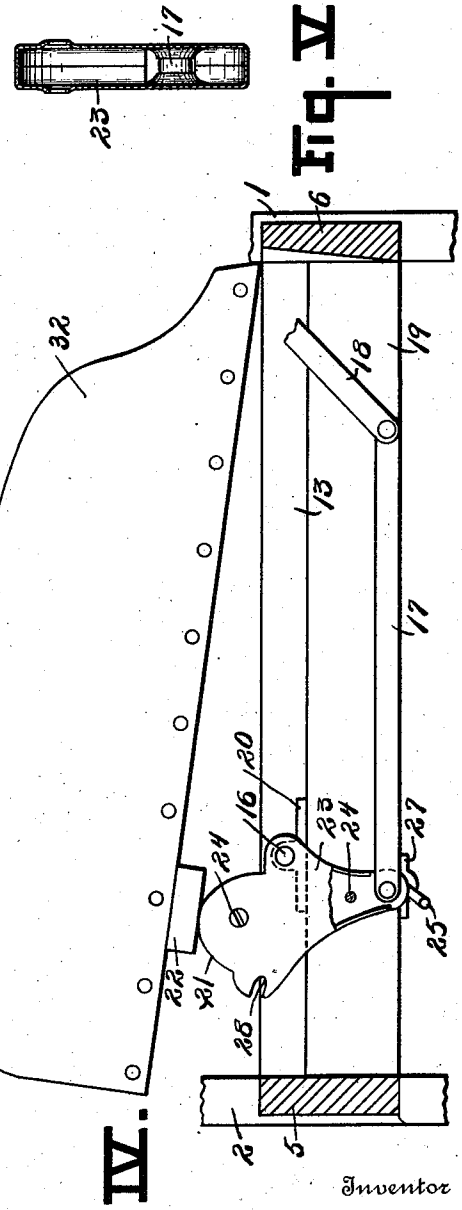

Fig. IV.

Witnesses

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UNITED STATES PATENT OFFICE.

MARTIN L. CROMER, OF STURGIS, MICHIGAN.

ADJUSTABLE CHAIR.

1,028,548. Specification of Letters Patent. Patented June 4, 1912.

Application filed December 1, 1911. Serial No. 663,391.

To all whom it may concern:

Be it known that I, MARTIN L. CROMER, a citizen of the United States, residing at the city of Sturgis, county of St. Joseph, 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.

The main objects of this invention are, first, to provide an improved adjustable chair which can be easily adjusted by the occupant of the chair to any position within its scope of adjustment. Second, to provide an improved adjustable chair embodying these advantages, in which the mechanism operates automatically and is operated by the disposition of the weight of the occupant. Third, to provide an improved adjustable chair which is very simple and economical in structure and at the same time has no delicate parts likely to be broken in use. Fourth, to provide in a chair having an adjustable back, an improved hinged connection which permits the ready assembling or removal of the back.

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 specification, in which:

Figure I is a front perspective view of a structure embodying the features of my invention. Fig. II is a vertical central section from front to rear, taken on a line corresponding to line 2—2 of Fig. III, the adjusting mechanism being shown in full lines. Fig. III is a detail transverse section taken on a line corresponding to line 3—3 of Fig. II, the cam 21 and the catch therefor being shown in full lines. Fig. IV is a detail view, showing the seat in its raised or elevated position. Fig. V is a sectional view of the cam 21 taken on a line corresponding to line 5—5 of Fig. II. Fig. VI is a detail section taken on a line corresponding to line 6—6 of Fig. II, showing the details of the back hinge. Fig. VII is a detail section taken on a line corresponding to line 7—7 of Fig. VI.

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, the chair frame of the structure illustrated, consists of rear posts 1 and front posts 2, which are extended to form the front and rear legs of the chair. On the upper end of the posts are arms 3. The posts are connected by side pieces 4 and front and rear pieces 5 and 6 respectively.

The back is made up of side bars 7 connected by cross pieces 8. The back is hinged to the rear posts, the hinged connections consisting of stud-like pivot members 9 and co-acting bearing members 10, the pivot members being secured to the posts and the bearing members 10 to the side pieces of the back.

The members 10 are struck up from pieces of sheet metal and have key-hole shaped openings 11 therein adapted to receive the pintles. The openings 11 open at the bottom of the members 10. The pintles are flattened at 12 on their undersides, so that the bearing slots can be engaged therewith only when the slots are presented edgewise to the pintles. This permits the ready mounting of the back and also permits its removal and when the parts are assembled substantially a maximum bearing surface is secured for the members 10 on their pintles.

The seat 13 is supported by cleat-like supports 14 secured on the inner sides of the side pieces 4 of the frame. The seat is adapted to be tilted on its rear edge as shown in Fig. IV.

To support the back in its adjusted positions on its hinges and also simultaneously tilt or adjust and support the seat, I provide a cam 15. The cam 15 is mounted on the pivot 16 below the seat to act thereon to elevate it and support it in its elevated position. The cam is connected to the back by the link 17 and the downwardly projecting arm 18. The cam is arranged between a

pair of supports 19 on the frame, the pivot 16 being carried by brackets 20 arranged on the upper edges of these supports. The engaging portion 21 of the cam is in front of the cam pivot 16.

The seat is provided with a friction block 22 which rests upon the cam. The cam is provided with an arm 23 which projects downwardly relative to the pivot 16, the link 17 being connected to this arm. The cam in the structure illustrated is formed of two stampings connected by screws 24.

The arm 23 is slotted to receive the link. The cam is locked in its normal position by means of the latch 25, the shank 26 of which is arranged through one of the frame side pieces 4 and a suitable supporting clip 27 on one of the supports 19. The cam is provided with notch-like keeper 28 for the latch 25.

The back cushions 29 and 30 are suitably suspended on the back, the means not being shown. The lower back cushion 30 is rounded or curved at its lower end as at 31, the curved portion extending below the surface and at the rear of the seat cushion 32. (See Fig. II). This curved end 31 is substantially the arc of a circle having the back hinge as its center, so that the lower end of the back cushion does not swing away from the seat when the back is tilted rearwardly. The advantage of this, is that the cushion effectively supports the user when the chair is adjusted to any position.

With the parts arranged as pointed out, the chair may be automatically adjusted by the occupant to any position within its scope and it is retained in its adjusted position without special manipulation or locking means.

I have illustrated and described my improved chair in detail in a simple and practical embodiment thereof.

I am aware that my improvements are capable of very great variation in structural details without departing from my invention. I do not however, attempt to illustrate and describe the various modifications herein as they will be understood by those skilled in the art to which this invention relates.

I desire to be understood as claiming my improvements in detail in the form illustrated, as well as broadly within the scope of the appended claims.

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

1. In a chair, the combination with the hinged adjustable back and tilting seat, of means for adjustably supporting said back comprising said tilting seat; a cam arranged under said seat to support it in its tilted positions, said seat being provided with a friction block in bearing engagement with said cam; a pair of spaced supports between which said cam is pivotally mounted, the cam pivot being at the rear of the engaging portion thereof, said cam being provided with a slotted arm projecting downwardly and rearwardly relatively to its pivot; an arm on said back projecting downwardly between said supports; an operating connection for said back and cam comprising a link pivotally connected to said arm and to said back and to said slotted arm of said cam and constituting a positive connection between said back and cam to operate the cam to raise and lower the seat by the tilting of the back and retain the back in its adjusted positions by the coaction of said seat and cam therewith; and a latch for said cam adapted to engage the same only when the seat is in its lowered position and the back is in its raised or forward position.

2. In a chair, the combination with the hinged adjustable back and tilting seat, of means for adjustably supporting said back comprising said tilting seat; a cam arranged under said seat to support it in its tilted positions, said seat being provided with a friction block in bearing engagement with said cam; a pair of spaced supports between which said cam is pivotally mounted, the cam pivot being at the rear of the engaging portion thereof, said cam being provided with a slotted arm projecting downwardly and rearwardly relatively to its pivot; an arm on said back projecting downwardly between said supports and an operating connection for said back and cam comprising a link pivotally connected to said arm and to said back and to said slotted arm of said cam and constituting a positive connection between said back and cam to operate the cam to raise and lower the seat by the tilting of the back and retain the back in its adjusted positions by the coaction of said seat and cam therewith.

3. In a chair, the combination with the hinged adjustable back, and tilting seat, of means for adjustably supporting said back comprising said tilting seat; a cam pivotally mounted under said seat to support the seat in its tilted position, said seat being in frictional bearing engagement with said cam; and a link pivotally connected to said cam and to said back and constituting a positive connection between said cam and back whereby the cam and back are adjusted together, said seat coacting with said cam for supporting the back in its adjusted positions.

4. In a chair, the combination with the hinged adjustable back and tilting seat, of means for adjustably supporting said back comprising said tilting seat; a pivoted cam arranged to support said seat in its tilted positions, said seat being in frictional bearing engagement with said cam; a positive operating connection for said back and cam whereby the cam is operated to raise and

lower the seat by the tilting of the back and the back is retained in its adjusted positions by the coaction of said seat and cam therewith; and a latch for said cam adapted to engage the same only when the seat is in its lowered position and the back is in its raised or forward position.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

MARTIN L. CROMER. [L. S.]

Witnesses:

JAY J. STANTON,

EARLE K. STANTON.