(No Model.) 5 Sheets—Sheet 1.

E. PYNCHON.

ADJUSTABLE CHAIR.

No. 374,628. Patented Dec. 13, 1887.

Fig. 1.

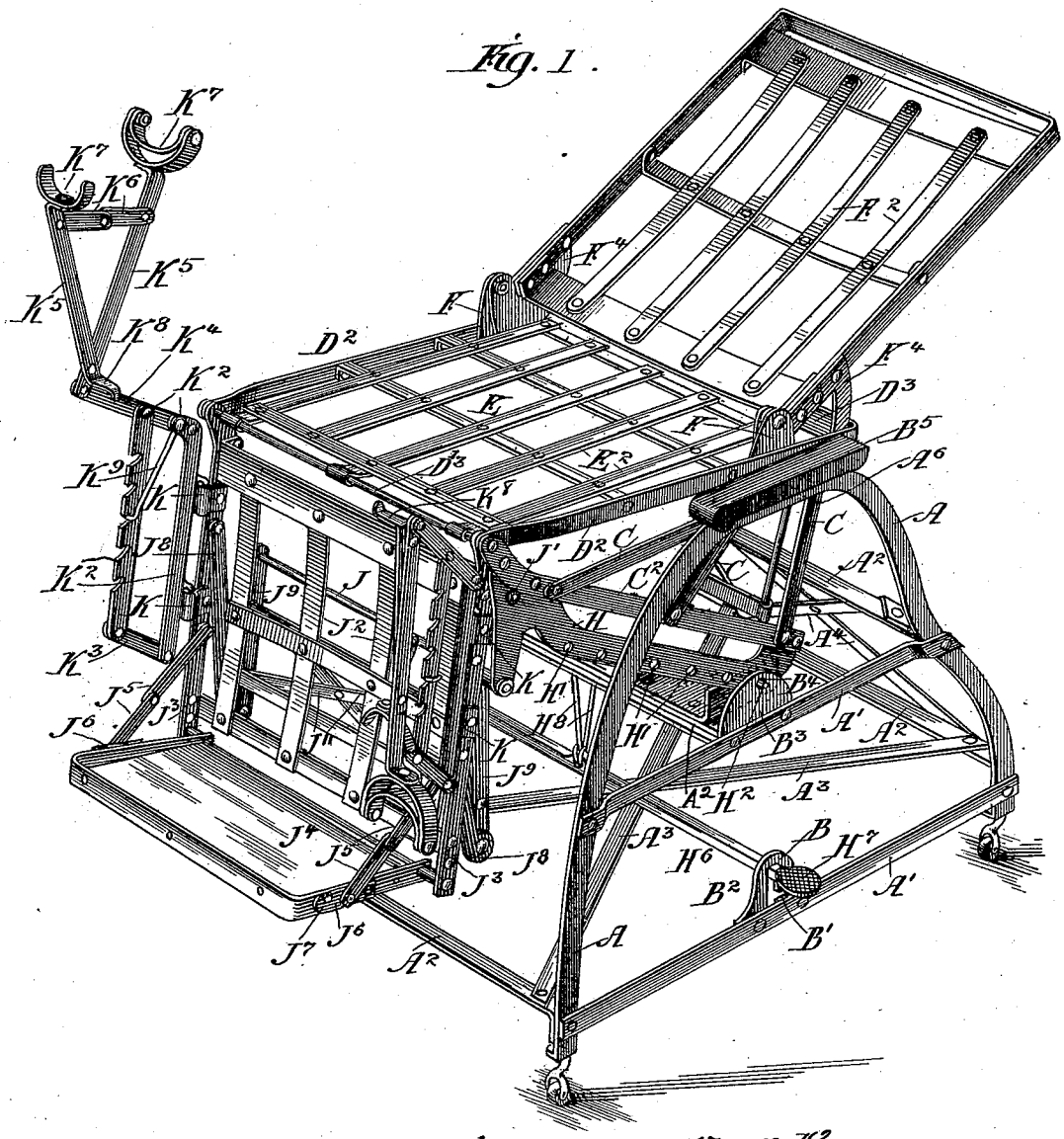
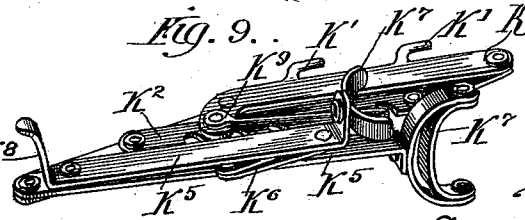


Fig. 9.



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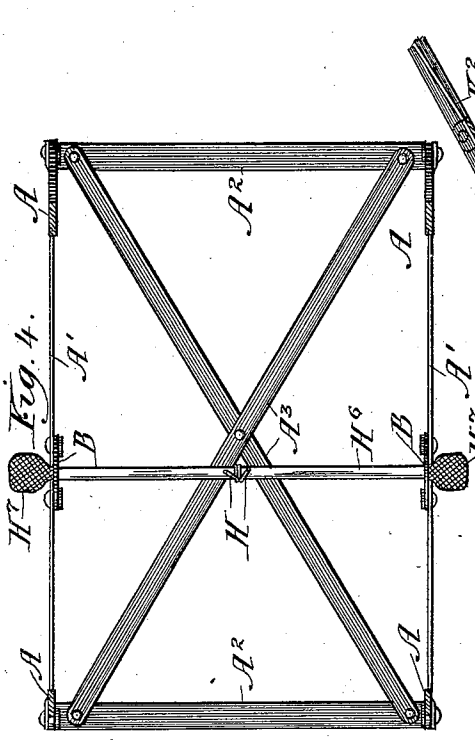

Fig. 4.

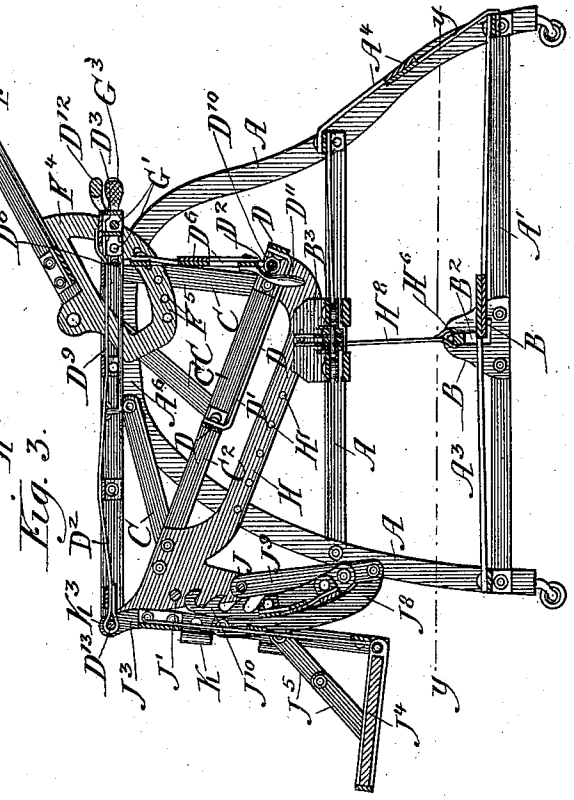

Fig. 3.

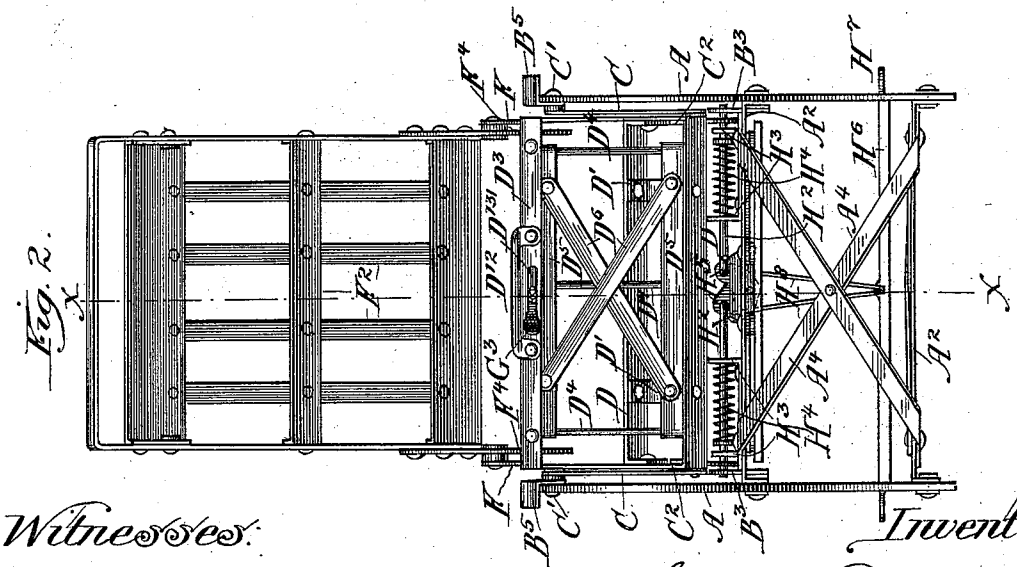

Fig. 2.

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Fig. 6.

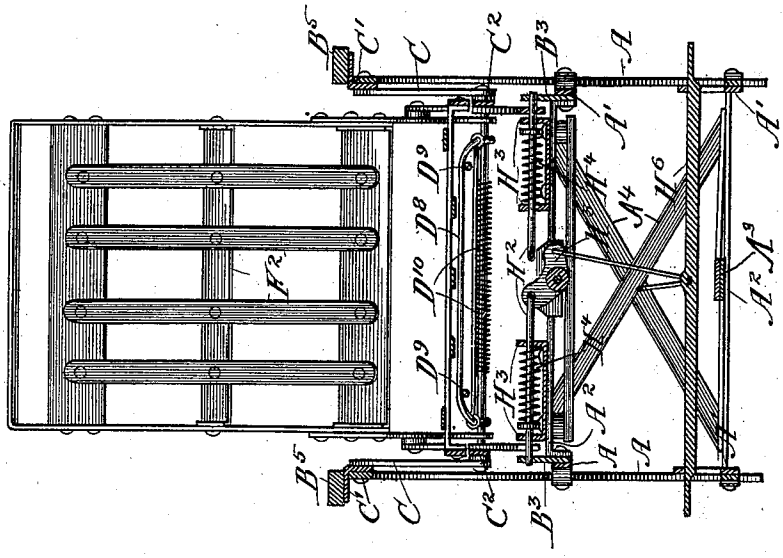

Fig. 5.

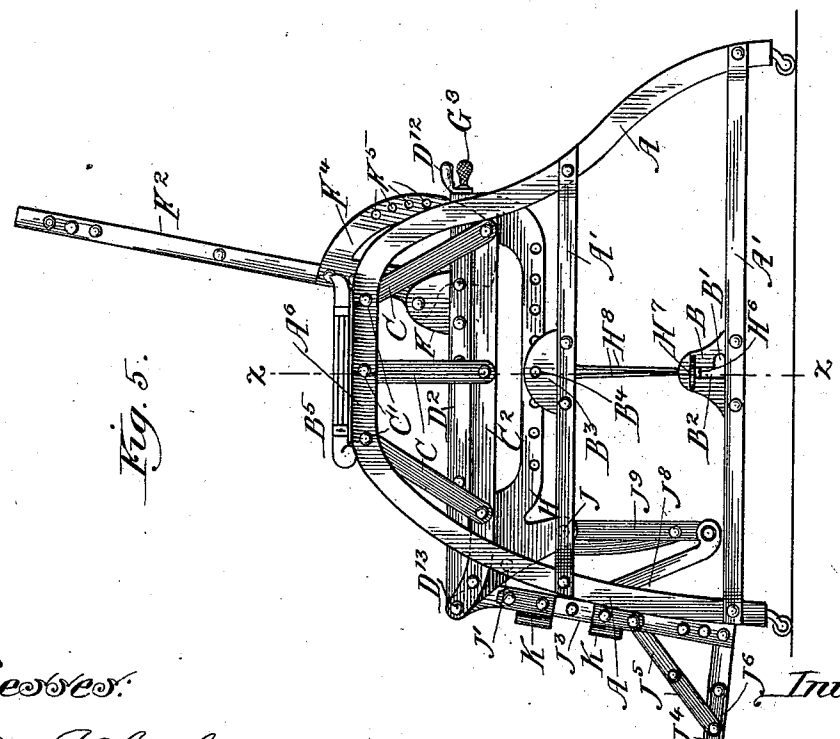

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Fig. 10.

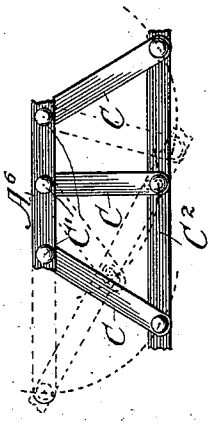


Fig. 8.

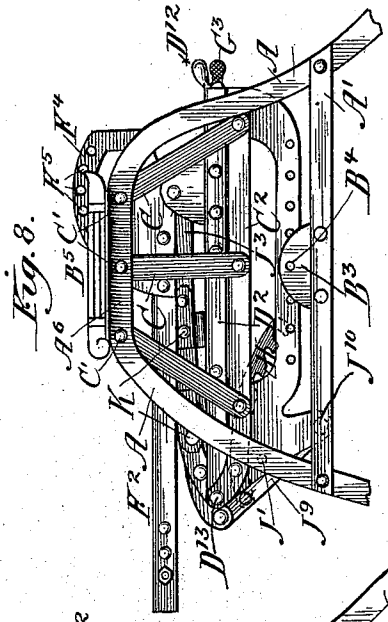
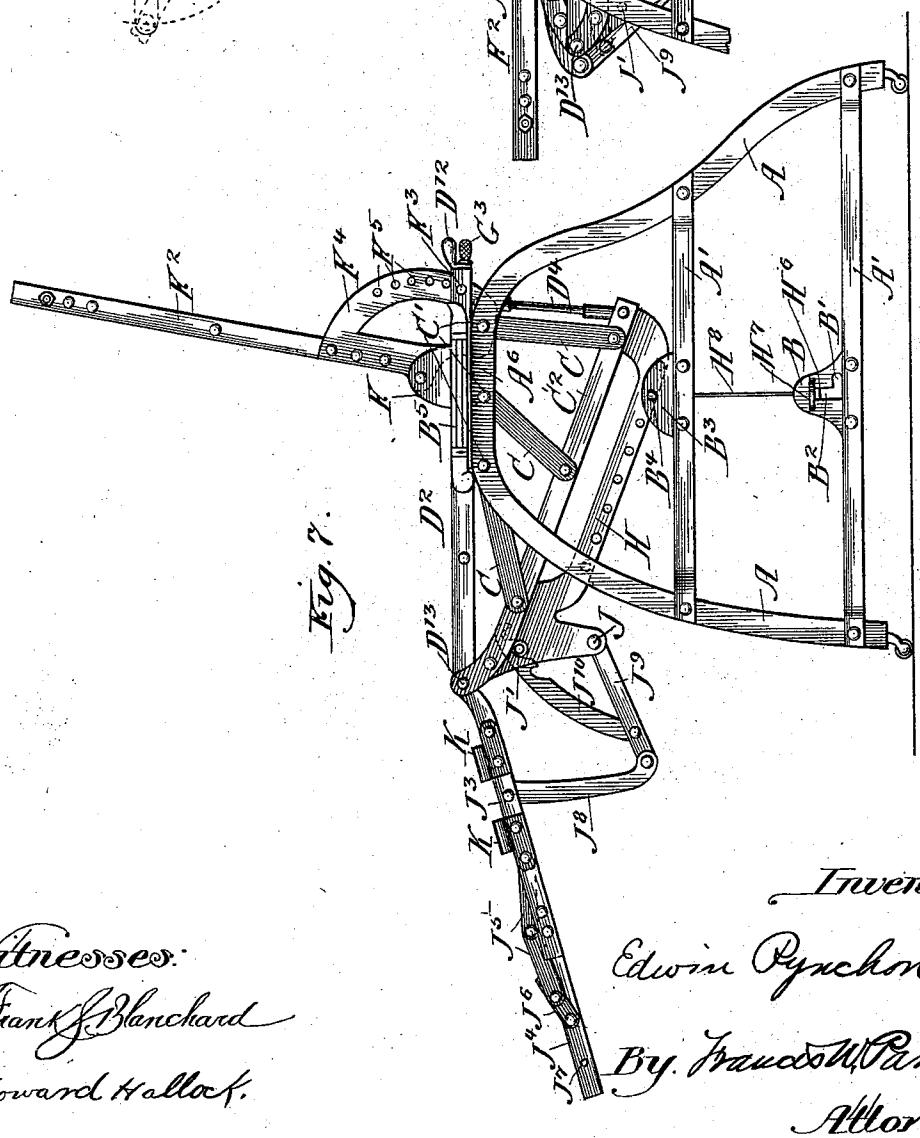


Fig. 7.



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(No Model.) 5 Sheets—Sheet 5.

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ADJUSTABLE CHAIR.

No. 374,628. Patented Dec. 13, 1887.

Fig. 11.

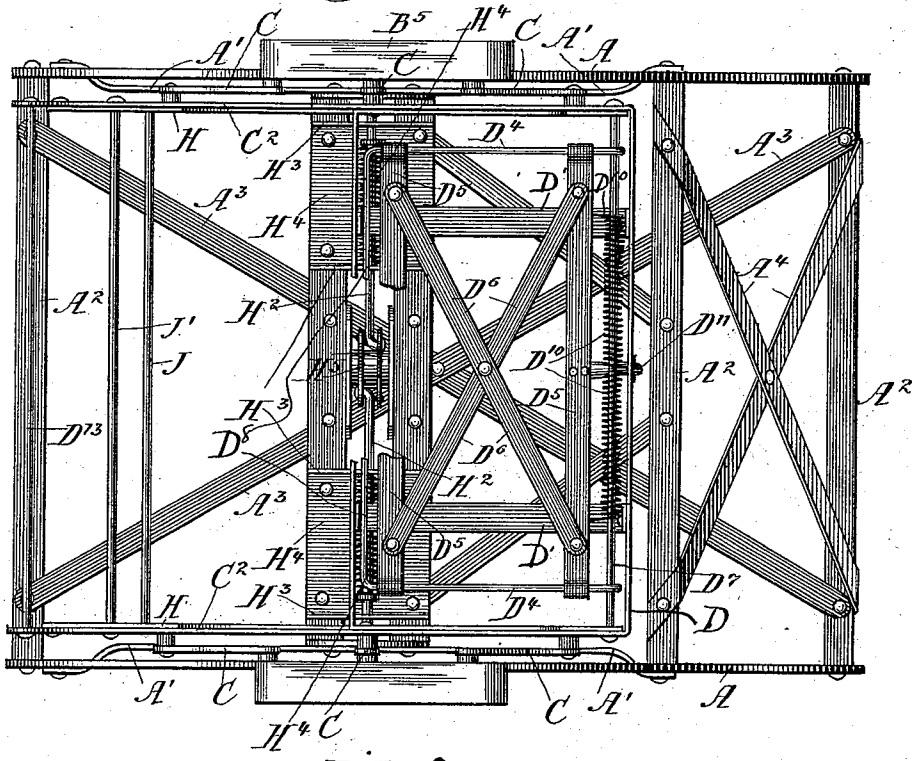
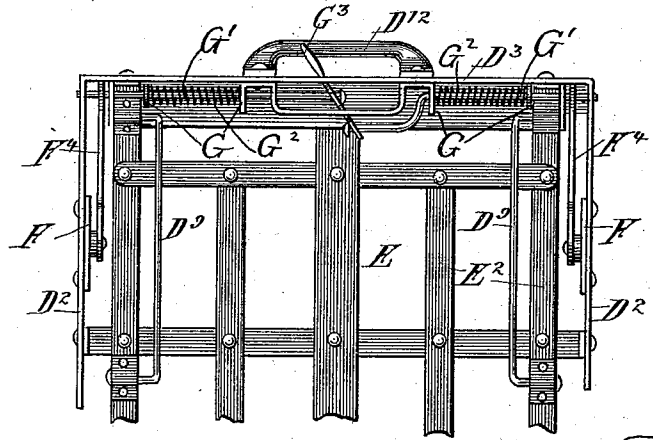


Fig. 12.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWIN PYNCHON, OF CHICAGO, ILLINOIS.

ADJUSTABLE CHAIR.

SPECIFICATION forming part of Letters Patent No. 374,628, dated December 13, 1887.

Application filed October 14, 1886. Serial No. 216,283. (No model.)

To all whom it may concern:

Be it known that I, EDWIN PYNCHON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Chairs, of which the following is a specification.

My invention relates to adjustable chairs such as are used for surgical and other similar purposes; and its objects are as follows: to provide a cheap and simple chair which will easily fold into compact form, which shall be capable of extreme tilting in either direction, which shall have an extensible, folding, and adjustably-inclining foot-rest, and which shall have a removable, adjustable, and reversible limb-rest. These objects I attain by the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of my chair with rear parts removed. Fig. 2 is a rear elevation with part removed to show the spiral spring. Fig. 3 is a section through the line X X. Fig. 4 is a section through the line Y Y. Fig. 5 is a side elevation. Fig. 6 is a section through the line Z Z. Fig. 7 is a side elevation. Fig. 8 is a side view of the body of the chair folded. Fig. 9 is a detail view of the leg-rest folded. Fig. 10 is a diagram of the hanger-frame. Fig. 11 is a plan view of the seat-elevating frame and seat-frame-locking mechanism, the seat itself being removed. Fig. 12 is an under view of the back tilting and locking mechanism.

A A are the curved side pieces which form the legs of the frame, having the lateral supports A' A', connected by the cross-bars A^2 A^2.

A^3 A^3 and A^4 A^4 are diagonal cross-bars which strengthen and complete the frame. On each lower lateral support is a projection, B, with a short horizontal slot, B', and a vertical slot, B^2. On the upper lateral support is a similar projection, B^3, having the hole B^4. At the top of each curved piece is the arm B^5. The upper part of each curved side piece is straight, as illustrated by A^6, and pivoted thereon are three hangers, C C C, by the pivots C' C' C', and in like manner pivoted at their lower ends to the bar C^2. The lengths of the hangers and the distances between the extreme pivots on the side pieces and the bar C^2 are such that when the bar C^2 is swung as far as possible in both directions the result is, that the parts successively form equal isosceles triangles. This is more clearly illustrated in the diagram.

The tilting frame is composed of the bars C^2 C^2, the cross-bars D D, the strengthening-bars D' D', the pivoted bars D^2 D^2, and the cross-bar D^3. The bars D^2 D^2 and C^2 C^2 are pivoted together by the rod D^{13}. The seat-elevating frame is composed of the rods D^4 D^4 and the cross-pieces D^5 D^5 and D^6 D^6, and it is pivoted below on the cross-rod D^7 to the rear ends of the bars C^2 C^2 and provided above with a long keeper, D^8, which receives the rods D^9 D^9, secured along the bottom of the seat. Spiral springs D^{10} bear against the cross-bars of this frame and tend to elevate it, while a depending handle thereon, D^{11}, may be used to counteract the spring and lower the frame.

E is the seat, made, as desired, of cross-bars E^2 E^2, and secured rigidly to the bars D^2 D^2 and D^3. On the rear of the bars D^2 D^2 are lugs F F, to which the back F^2 is pivoted, and also locking-apertures F^3 F^3. The back F^2 is composed, as desired; but at its lower sides and concentric with its pivots are circumferentially-perforated segments F^4, whose perforations are lettered F^5. On the back of the bar D^3 is a handle, D^{12}, and an aperture, D^{13}, and on the front of the same are bearings G G for the laterally-reciprocating rods G' G'. These rods are forced outwardly by the spiral springs G^2 G^2; but they may be retracted by the lever G^3. These rods, by entering the apertures F^3 F^3 and F^5 F^5, serve to lock the back in any position.

H H are pieces, shaped as shown, secured to the bars C^2 C^2, perforated at H' H', and carrying at their forward ends the cross-rods J and J'.

H^2 H^2 are laterally-reciprocating rods sliding in the bearings H^3 H^3 and forced outward by the spiral springs H^4 H^4, and secured at their inner ends to the elbow-levers H^5 H^5.

H^6 is a cross-bar with foot-pieces H^7 H^7. Its ends project through the slots B^2 B^2. It has at its center upwardly-extending rods H^8 H^8, which engage the free ends of the elbow-levers H^5 H^5. By bearing down on either of the foot-pieces the rods H^2 H^2 will be retracted, and

the tilting frame can be tilted or swung on its hangers. By putting the ends of the bar H^6 into the aperture B′ the tilting frame is left free. When the ends are left free in the slots, the spirals push the rods outward and the tilting frame is locked in position.

J^2 J^2 are the cross-bars of the limb-support, which is pivoted by the ends of its side bars, J^3 J^3, to the rod D^{13}. At the lower ends of these side bars is pivoted the foot-piece J^4, which is supported by the jointed rods J^5 J^5 and the third-class levers J^6 J^6, which are pivoted to the foot-piece and the rods J^5 J^5 and notched to engage the pins J^7, one of such pins being on each side of the foot-piece.

J^8 J^8 are hangers, pivoted to the side bars of the limb-support, and curved at their lower ends and pivoted to the bars J^9 J^9. The latter are pivoted on the rod J. Pivoted to the bars J^9 J^9 is a frame composed of the curved bars J^{10} J^{10} and the cross-pieces J^{11} J^{11}. The bars J^{10} J^{10} are provided with notches which engage the rod J′ and serve to hold the limb-support in any desired position. On the side bars of the limb-support are the lugs K K, with eyes to receive the leg-rest.

K^2 K^2 are parallel bars pivoted to the cross-bars K^3 and K^4, the latter having pivoted at its outer end the extensible triangular frame composed of the side bars K^5 K^5, connected by the jointed bar K^6 and provided each with the leg-receiver K^7 K^7. The outer bar K^5 also has the foot-receiver K^8 at its lower end. The outer bar K^2 is notched on its outer edge to engage the hooked end of the pivoted hanger K^9.

The use and operation of my invention are as follows: The back can be freed from its locking device and turned over so as to fold upon the seat, or it can be locked at any desired angle. This is done by manipulating the lever G^3, which can be used to retract the locking-rods G′ G′ from the apertures F^3 in the side bars D^2. When the lever is released, the spiral springs G^2 G^2 throw the rods out into said apertures and the back is locked. The chair may be easily tilted in either direction by the use of the lever H^6. When the foot bears down on one end of this lever, pressure is applied to the bell-crank levers H^5 H^5, and the locking-rods H^2 H^2 are retracted from the apertures B^4 B^4, and the tilting frame can be swung. If the end of the lever be carried into the slot B′, the body of the chair is free to tilt. The limb-support is pivoted to the chair proper by the rod D^{13} and can be held at any angle by locking the curved bars J^{10} J^{10} on the rod J′. The foot-piece J^4 can be turned down, as in Fig. 7, in which position it is securely held by the bars J^5 and lever J^6, and also by reason of its edge engaging the lower edge of the limb-support. The leg-support can be used in either of the positions shown in Fig. 1. By hooking the rod K^9 into the notches on the bar K^2 the height of the leg-receivers can be adjusted. If the bars K^5 K^5 are spread out and turned up, as shown, on one side, the two leg-receivers K^7 K^7 can be used. When these parts are turned down, the foot-receiver K^8 is in position for use. To elevate the seat, the tilting frame is first freed and swung forward, as shown in Fig. 7, and there locked. The seat is then raised by means of the handle D^{12}, and the seat-elevating frame, being freed from the weight of the seat, immediately rises under the influence of the spiral springs D^{10} D^{10} and holds the seat up. The keeper D^8 slides along the rods D^9 D^9. To fold the chair-body into the shape shown in Fig. 8, the foot-piece J^4 is folded up onto the limb-support. The limb-support is then folded up onto the seat, as shown. The back is now unlocked and folded forward onto the limb-support. The seat is then lowered. The diagram shows the arcs described by the several hangers as the chair is tilted.

I herein disclaim all matter shown in this application, and also shown and claimed in my application Serial No. 203,468, referring particularly to the hangers whereby the seat-frame is suspended and the lock-bars whereby it is locked in position.

I claim—

1. In an adjustable chair, the combination of a limb-support curved and pivoted at its inner end to the seat-frame, bars pivoted together and respectively to the chair-frame and the limb-support, the latter bars being curved, as shown, a ratchet-bar pivoted to one of the pivot-bars, and a catch to engage said ratchet, whereby the support may be held at various angles and folded over onto the seat.

2. In an adjustable chair, a limb-support, in combination with a pivoted foot-piece having an adjustable support on each side, consisting of three bars, one pivoted to said foot-piece, the others pivoted together and respectively at their other ends to the limb-support and to the middle of the first bar, and a pin on the foot-piece, and a notch on the bar having a free end to engage said pin, whereby the foot-piece may be supported by said bars either at right angles to or parallel with the limb-support to which it is attached, as shown.

3. In an adjustable chair, a seat pivoted to the front of the chair-frame, in combination with an elevating-frame secured to the rear of the seat-frame and adapted to rise and support the seat when the latter is raised.

4. In an adjustable chair, the combination of a seat pivoted at the front to the chair-frame, a spring elevating-frame secured at the rear to the chair-frame and adapted to automatically rise when the seat is elevated, and a handle whereby said spring elevating-frame may be lowered when it is desired to lower the seat.

5. In an adjustable chair, a leg-support consisting of pivoted bars secured to the supporting-bars below, connected above by a jointed bar, and provided each with a leg-receiver above.

6. In an adjustable chair, a leg-support consisting of two bars pivoted together at their

lower ends and secured upon a suitable support, connected above by a jointed bar, and provided each with a leg-receiver and one with a foot-receiver.

7. In an adjustable chair, the combination of a stirrup, a support therefor, which consists of a quadrilateral frame of pivoted bars secured at one side upon the chair, one of said bars being provided with notches, in combination with a rod pivoted at one angle of the quadrilateral and provided with a hook at its other end to engage the notches, with a leg-support secured upon said quadrilateral frame.

8. In an adjustable chair, the combination of a supporting-frame, a tilting frame thereon, a seat-frame pivoted to the front of said tilting frame, and an elevating-frame secured to the rear of the tilting frame and adapted to rise and support the seat when the same is raised.

In testimony whereof I have hereunto set my hand, this 9th day of October, A. D. 1886, at Chicago, Illinois, in the presence of two witnesses.

EDWIN PYNCHON.

Witnesses:

FRANCIS W. PARKER,

G. G. JACKSON.