

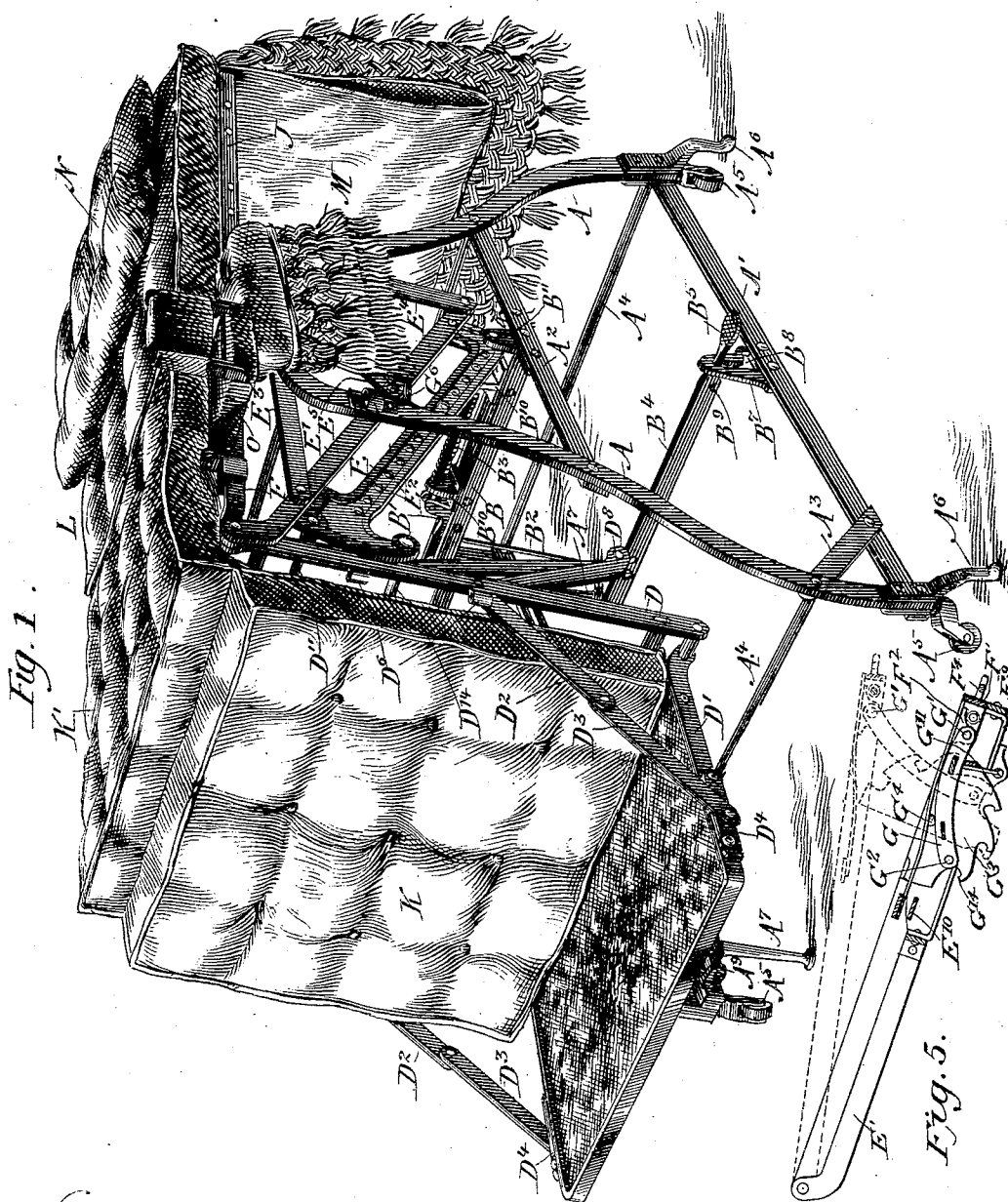
(No Model.)

2 Sheets—Sheet 1.

E. PYNCHON.
ADJUSTABLE CHAIR.

No. 484,571.

Patented Oct. 18, 1892.



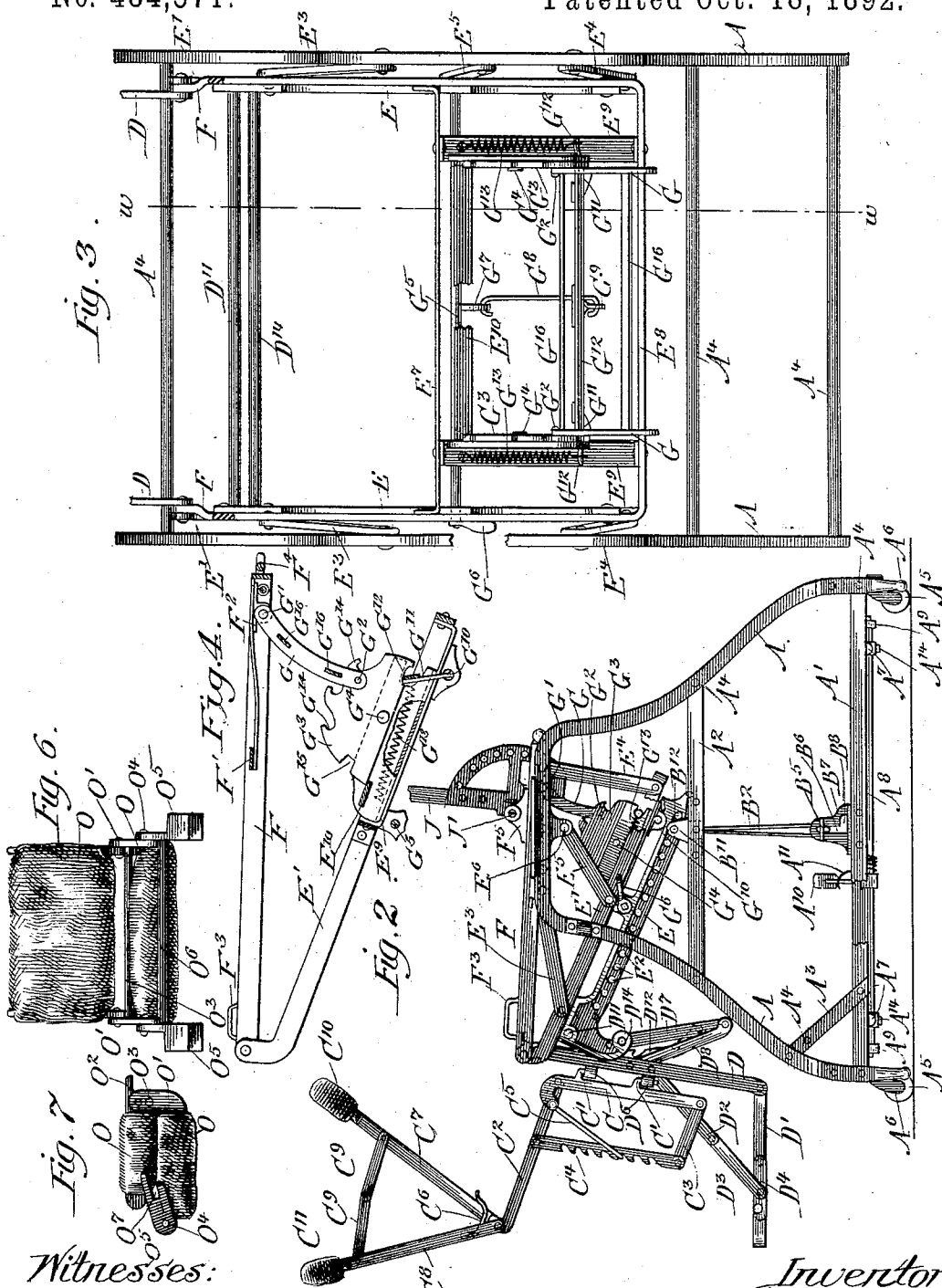
Witnesses:
Frank Blanchard
Fred Gerlach.

Inventor.
Edwin Pynchon
By Francis W. Parker
Attorney.

E. PYNCHON.
ADJUSTABLE CHAIR.

No. 484,571.

Patented Oct. 18, 1892.



Witnesses:
Frank Blanchard
Fred Gerlach.

Inventor
Edwin Pynchon
By Francis W. Parker
Attorney.

UNITED STATES PATENT OFFICE.

EDWIN PYNCHON, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALBERT HOEFFER,
JOHN C. SKELTON, AND AARON P. GOULD, OF CANTON, OHIO.

ADJUSTABLE CHAIR.

SPECIFICATION forming part of Letters Patent No. 484,571, dated October 18, 1892.

Application filed February 24, 1888. Serial No. 265,203. (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 a new and useful Adjustable Chair, of which the following is a specification.

My invention relates to adjustable chairs, such as are used by surgeons and the like; and its object is to provide an improved construction of the same whereby I secure superior advantages with respect to efficiency in operation.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a chair constructed in accordance with my invention. Fig. 2 is a side view of the same, the cushions being removed. Fig. 3 is a plan view partly broken away. Figs. 4 and 5 are detailed sectional views at line *ww* of Fig. 3, on an enlarged scale, showing the seat-elevating mechanism. Figs. 6 and 7 are detail views of the knee-rest.

In the said drawings the reference-letters A designate the side bars of the seat-frame, curved as shown, provided each with the cross-bars A' A² and coupled together by the cross-rod A⁴ A⁴. This frame rests upon the primary legs or rollers A⁵ A⁵. To secure a proper position for frame cross-rod A⁴, so that it will not be engaged by the bottom of the limb-support when the tilting frame is being operated, it is attached on either side to the short bar A³. Adjacent to each of the rollers on one side of the chair are the short secondary legs A⁶ A⁶, the same being a little shorter than such roller and its support on the outside thereof. Adjacent to and inside of the rollers on the opposite side of the chair are the secondary hinged legs A⁷ A⁷. These latter legs are secured on rod A⁸, pivoted to the cross-bar A' at the points A⁹ A⁹. On this rod is the foot-piece A¹⁰ and the coiled spring A¹¹, the two being opposed, so that the spring tends to hold the legs A⁷ folded up, while by pressing upon the foot-piece when that side of the chair is raised they may be turned down until the projection A¹⁴ engages the bottom of the cross-bar A', when by lowering the

chair the weight thereof will hold the legs A⁷ in such turned-down position.

B is a double cross-bar on the chair-frame, extended from the upper cross-bars A², on which is pivoted the elbow-lever B', to one end of which is secured the rod B² and to the other the spring-surrounded and laterally-actuated reciprocating rod B³, adapted to pass through the apertures in the side bar of the tilting frame, and thus lock the same in position. The rod B² is secured to the transverse bar B⁴, to the ends of which are fastened the foot-piece B⁵, whereby said bar may be depressed to operate the lever B', and thus withdraw the lock-bars and free the tilting frame. The bar B⁴ passes at either end through the vertical slot B⁶ in the projection B⁷, which is securely fastened to the cross-bar A'. On one side of the chair there is at the lower end of the slot B⁶ a short horizontal slot B⁸, in which can be hooked the bar B⁴, thereby causing the tilting frame to remain unlocked, so that the chair can be swung or rocked. The bar B⁴ is further provided at either end with the pin B⁹, which prevents too great lateral motion of the bar through the slot B⁶. The laterally-reciprocatory locking-rod B³ travels in the bearings B¹⁰ B¹⁰, and after passing through apertures in side bar E of the tilting frame is received in hole B¹² in the projection B¹¹, thereby giving rigid support to the tilting frame.

C is a bar having the pivot-pieces C', the lower of which is the longer, by which it is pivoted upon any convenient portion of the chair—as, for instance, upon the limb-support—and projecting from it and pivoted to it are the two bars C² C³ joined by the pivoted ratchet-bar C⁴, which is adapted to engage the pivoted diagonally-hanging hook C⁵. Upon C² is pivoted the foot-rest C⁶, and also the leg-supporting bars C⁷ C⁸, which are connected at their upper ends by the link-rods C⁹ C⁹ and which carry, respectively, the pivotally-supported leg-rests C¹⁰ C¹¹.

Pivoted to the front of the tilting frame is the limb-support consisting of the side bars D D, to the lower end of which is pivoted the foot-piece D'. The bars D D are connected by suitable framework and the foot-

piece is made up as desired. The outer edge of the foot-piece is supported by means of the link-bars D² D³ D⁴. Upon the forward end of each side bar of the tilting frame is pivoted on the cross-rod D¹⁴ the bar D⁷, to the lower end of which is pivoted the bar D⁸, and this bar in turn is pivoted to the side bars D. The limb-support is held at any convenient angle by means of the ratchet-bar B¹², adapted to engage the cross-rod D¹¹ of the tilting frame.

E is the side bar of the tilting frame, having an upper portion E'. The two sides are connected by the cross-rods D¹¹ D¹⁴ and by the cross-bars E⁷ and E⁸. These bars E⁷ and E⁸ are connected by irregularly-shaped bars E⁹ E⁹, which give support to the elevating mechanism and which in turn are connected by the cross-bar E¹⁰, which serves additionally as a stop to the rotation of the sector-plate G³ when the seat-frame F is fully elevated. Along the lower portion of E are the perforations E², arranged in a right line. The support E' is suspended by links E³ E⁴ E⁵ from the cross-bar at the top of the chair-frame, the link E⁵ being pivoted to a short hanging piece E⁶ on said cross-bar. To the forward end of the tilting-frame bars E' are pivoted the seat-frame bars F, which, with suitable cross-bars, form the seat-frame.

F² are short rigid bars in the seat-frame, to which the elevating mechanism is attached.

F³ F⁴ are handles secured, respectively, to the front and rear of the seat-frame.

The seat-frame is adjustably secured in the rear by the following means:

G G are curved bars pivoted by screws at G' to the end of the seat-frame bars F² and at G² to the ratchet-sector G³, which is pivoted at the point G⁴ to the bar E⁹ of the tilting frame.

G⁵ is a rock-shaft journaled in the side bars E E and having a handle G⁶ at either side. It also has the projection G⁷, to which the link G⁸ is attached, such link being in turn connected to a downward projection G⁹ on the cross-bar G¹², which is also pivoted in the bar E⁹ at the point G¹⁰ by means of the short arms G¹¹ and is adapted to engage the notches on the ratchet-sector G³. The short arms G¹¹ are constantly drawn forward by the action of the spiral springs G¹³ G¹³, which hook about an extension of the bar G¹². Each of the ratchets on the sector-plate is provided with a square lip G¹⁴ to prevent the cross-bar G¹² escaping therefrom until the sector has been slightly turned by elevating the seat-frame. In addition to the ratchets shown in the ratchet-sector is the square notch G¹⁵, which when the seat-frame is lowered engages the cross-bar G¹² and locks the seat-frame down. To release it requires that pressure be made upon the handle G⁶.

G¹⁶ G¹⁶ are cross-bars which join together the bars G G', making thereby a rigid supporting-frame.

The corner of the ratchet-sector G³ engages the cross-bar E¹⁰ when the seat is fully elevated, as shown in Fig. 4.

J is the back of the chair, composed of suitable framework, cross-bars, &c., and pivoted at the points J' to the lugs F⁵, which are secured to the rear of the seat-frame.

K, K', and L are respectively the leg-rest, seat, and back-cushions; N, a pillow, and M a pillow-case.

The letter O designates a folding knee rest or support, which is attached to the side of the chair which is lowest when tilted for the Sims position, as shown in Fig. 1. This knee-rest forms a sort of side extension to the chair-seat, as shown, and prevents the occupant slipping off when the chair is tilted in the Sims position. It is composed of a vertical and a horizontal section, which are hinged together at point O'. When opened, the projection O² engages the cross-rod O³. The horizontal section is pivotally hinged at O⁴ to the pieces O⁵, and when opened to a position at right angles thereto engages the cross-bar O⁶, which joins the pieces O⁵ O⁵, which pieces are further provided with slots O⁷ O⁷, so that they can be set upon the side bars F of the seat-frame. This knee-support when fully opened assumes the position shown in Fig. 1, and when not in use can be folded in a small compass, as shown in Fig. 7.

In use the chair-frame rests upon the primary legs or rollers A⁵ A⁵. The short secondary legs A⁶ A⁶ are adapted to engage the ground or floor, and thus relieve the rollers A⁵ A⁵ when the opposite side of the chair is slightly tilted, and the chair is then supported in a tilted position by means of the secondary hinged legs A⁷ A⁷, which are brought into position by pressure of the foot upon the foot-piece A¹⁰, thus rotating the rod A⁸ against the action of the spring A¹¹ and turning the legs A⁷ A⁷ down into position. The chair must be sufficiently tilted before this can be done, and it is then allowed to rest upon the secondary legs in a tilted position. It will be observed that the employment of the secondary legs A⁶ A⁶, in addition to freeing the rollers A⁵ A⁵, adjacent thereto, also has the effect of changing the normal center of gravity of the chair and removes the possibility of the tipping over of the chair when tilted. Without their employment in a chair mounted on rollers the same would be when tilted very insecure.

By simply raising the elevated side of the chair very slightly the secondary hinged legs will be released and caused to fold up under the chair by the action of the spring A¹¹, when the chair may be lowered to rest in its normal position on the rollers A⁵ A⁵. The secondary legs, if desired, can when manufacturing the chair be secured so as to give a tilt in the opposite direction, or, if preferred, can be duplicated on the opposite sides, so that the chair will give either a right or a left handed Sims position. In this latter case the two pairs of

secondary hinged legs can be used together, if desired, which will result in the entire chair being vertically and bodily elevated.

To raise the seat-frame, its rear end is elevated by the handle F^4 , which operation through the medium of the bar G rotates the sector, and the latter is then locked in position by the transverse bar, which engages its notches, said bar being held or drawn into such notches by due action of the spiral springs G^{13} . It will be seen that by lessening the tilt and employing any of the intermediate notches in the sector-plate different degrees of elevation or tilt of the seat-frame can be obtained at will.

To lower the seat-frame, it is first slightly elevated, so that the cross-bar G^{12} may clear the points or square ends of the notches, and by operating the handle G^6 the rod G^5 is rocked or rotated slightly in its bearings, pressure applied to the link G^8 , and the cross-bar G^{12} thrown backward against the action of the spiral springs G^{13} and out of the notches in the ratchet-sector. The seat is then lowered to the position desired and the handle released, whereupon the spiral springs will cause the cross-bar G^{12} to engage the proper ratchet-notch.

It will be observed that in several instances I have described but one device when there are duplicates—that is, I have described in the singular a device which may be found on both sides of the chair—and it will be understood that the description will thus apply to either side or both sides or to both of the duplicated forms.

Having thus described my invention, what I claim is—

1. In an adjustable chair, the combination of the chair-frame, with primary legs on which it normally rests, fixed secondary legs on one side of the chair slightly shorter than the primary legs, and hinged secondary legs on the other side of the chair longer than the primary legs, adapted to be turned downward to support the chair or adapted to be folded upward out of the way, so that the chair may rest upon its primary legs, or when the hinged secondary legs are turned down the chair can rest upon all its secondary legs and be supported at an angle.

2. In an adjustable chair, the combination, with the chair-frame, of primary legs, fixed

secondary legs at one side of the chair, slightly shorter than the primary legs, hinged secondary legs at the other side of the chair longer than the primary legs, springs to normally fold the hinged secondary legs up under the chair-frame, and a foot-lever by the operation of which such secondary legs may be thrown down into position of use.

3. In an adjustable chair, the combination of primary legs with casters on which the chair moves, secondary legs on one side slightly shorter and upwardly extending and external to the primary legs, and folding secondary legs on one side slightly longer than the primary legs.

4. In an adjustable chair, the combination of a seat-frame with a supporting-frame, said seat-frame pivoted at one end to said supporting-frame, bars pivoted to the other end of said seat-frame, pivoted ratcheted sectors on the supporting-frame, said bars being eccentrically pivoted thereto, and locking devices to secure the sectors in any position, so that the free end of the seat-frame may be adjustably supported.

5. In an adjustable chair, the combination of a chair-frame provided with primary legs and with secondary legs slightly shorter than the primary legs adjacent thereto and extending outwardly, so that by raising the opposite side of the chair the tilt will cause the secondary legs to engage the floor and leave the primary legs free, and means for holding said chair in tilted position.

6. In an adjustable chair, the combination of a chair-frame provided with primary legs and on one side with short secondary legs slightly shorter than the primary legs, while the opposite side of the chair is provided with hinged secondary legs longer than the primary legs, which when lowered elevate their side of the chair and cause the secondary legs on the opposite side to engage the floor, so that the primary legs are left free.

7. In an adjustable chair, a knee-rest consisting of a horizontal portion secured at the side of the chair and a vertical portion hinged to the extremity thereof.

EDWIN PYNCHON.

Witnesses:

CORA L. CADWALLADER,
JOHN R. NETTENSTROM.