

No. 612,988.

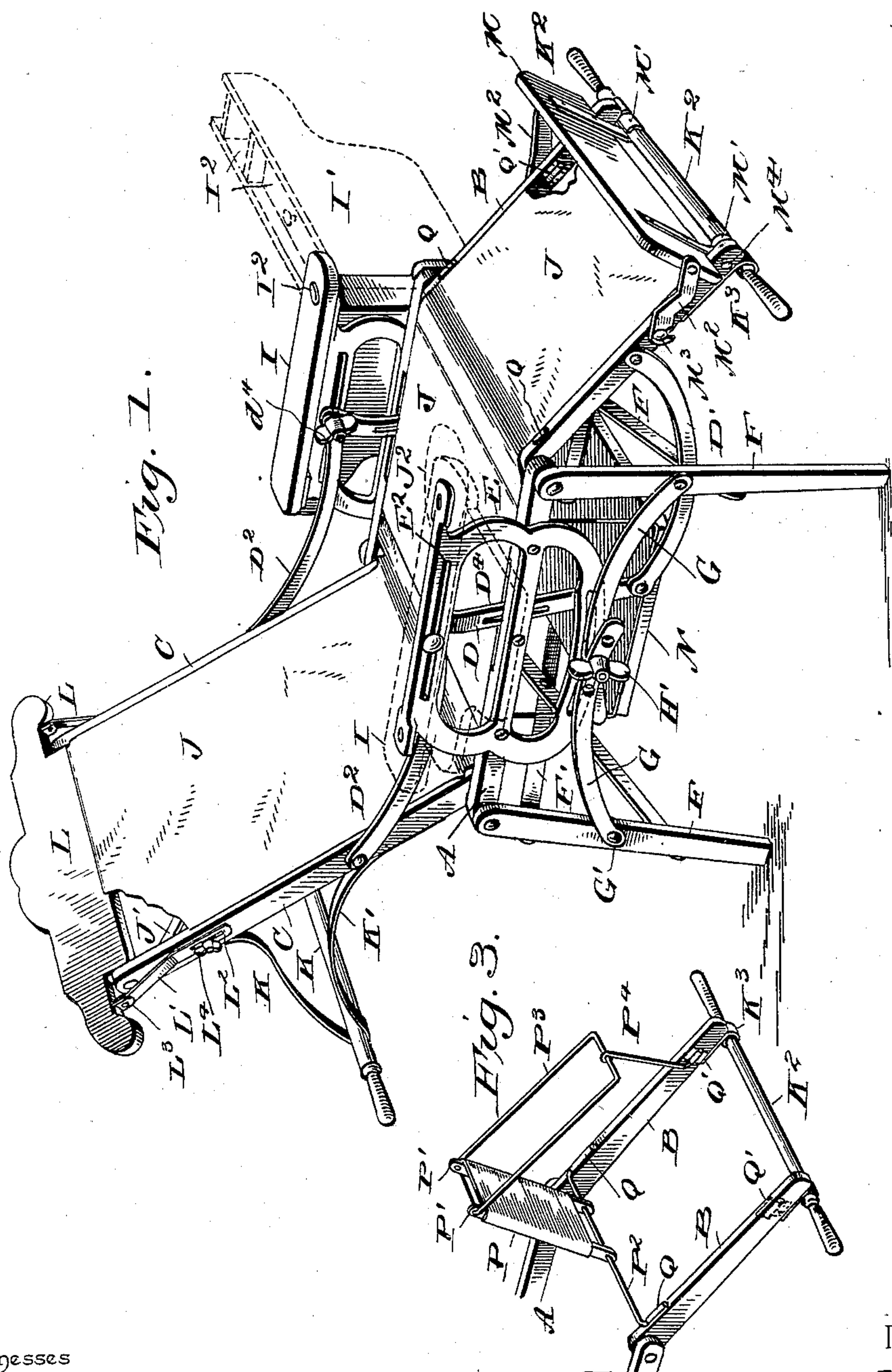
Patented Oct. 25, 1898.

J. A. CRANDALL.
CONVERTIBLE CHAIR.

(Application filed Apr. 27, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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2 Sheets—Sheet 2.

Fig. 2.

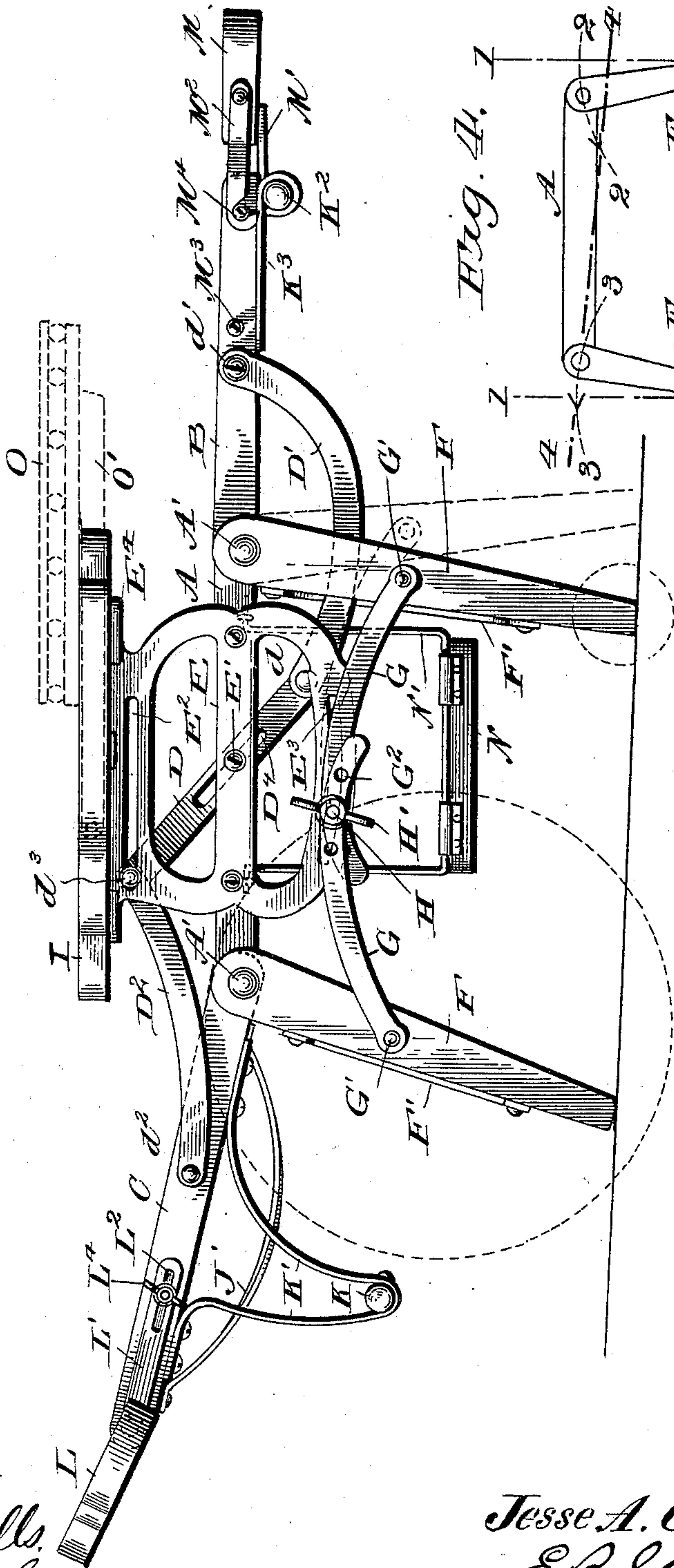
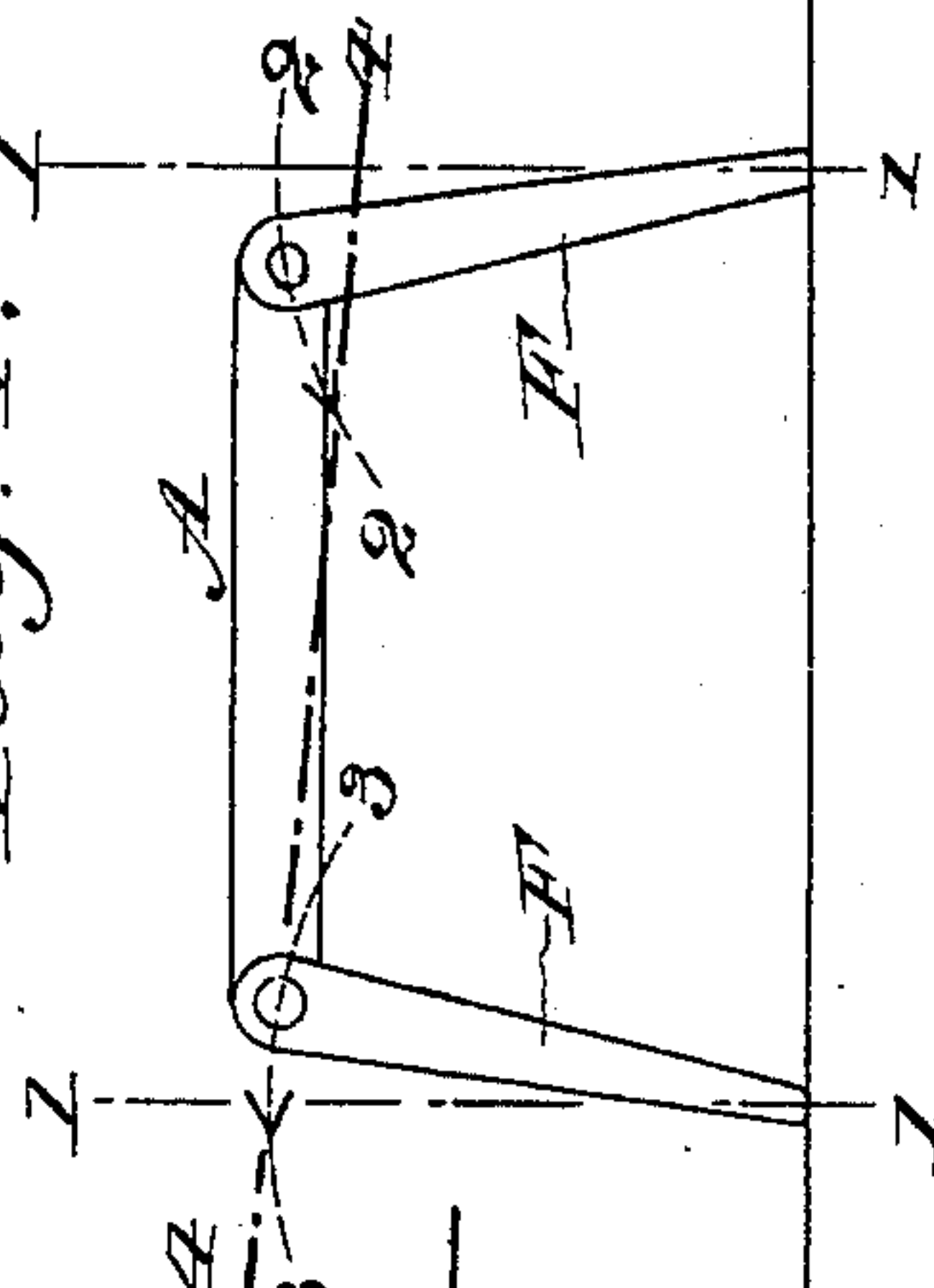


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

JESSE A. CRANDALL, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO
FRANK E. CALDWELL AND SAMUEL H. SIMON, OF SAME PLACE.

CONVERTIBLE CHAIR.

SPECIFICATION forming part of Letters Patent No. 612,988, dated October 25, 1898.

Application filed April 27, 1898. Serial No. 678,962. (No model.)

To all whom it may concern:

Be it known that I, JESSE A. CRANDALL, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings, State of New York, have invented certain new and useful Improvements in Convertible Chairs, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to convertible chairs, and particularly to that class wherein the members of the chair are adjustable for the purpose of adjusting the chair to different positions.

The invention has for an object to provide an improved means for adjusting the back and leg frames and also for adjusting the supporting-legs in various positions.

It also has for its object to provide an improved construction of head-rest, and also of pivoted foot-rest.

A further object is to provide a removable rest or support to be applied to the leg-frame for the purpose of supporting a broken leg of a patient in the proper position when the chair is in use.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective of the chair in a partially-inclined position. Fig. 2 is a side elevation of the chair adjusted in a substantially horizontal position to form a couch or bed. Fig. 3 is a detail perspective of an attachment for supporting the injured limb of a person using the chair, and Fig. 4 is a diagrammatic illustration of the leg adjustment.

Like letters of reference indicate like parts throughout the several figures of the drawings.

The letter A designates the seat-frame of the chair, which is composed of opposite side bars suitably connected together at opposite ends by cross-rods A', upon one of which the opposite bars B of the leg-frame are pivoted and upon the opposite one of which the side bars C of the head-frame are pivoted. The head and leg frames are thus capable of ad-

justment to vary their inclination in relation to the seat-frame A, and this adjustment is accomplished by means of a pivoted lever D, mounted adjacent to a bracket E, one of which is secured to each of the opposite bars of the seat-frame by means of screws or bolts E'. From the lower end of this lever D a curved link D' extends to and is pivotally connected with the leg-frame B by means of a screw or bolt d'. The opposite end of this link D' is pivoted to the lower end of the lever D by means of a suitable pin d. The upper end of the lever D is connected by a similar link D² with the head-frame, and the link is provided with a pivot d², located on the head-frame, and with a headed bolt or pivot d³, passing through the upper end of the lever D. This bolt d³ passes through a slot E² in the bracket E, by which it is guided in its movement, and the head of the bolt bears against the face of the bracket, so that it may be clamped in any desired position by means of a wing-nut d⁴ or any suitable device located upon the inner face of the bracket and convenient to the occupant of the chair. The slot E² is straight, and in order to permit the necessary movement of the lever D as the parts assume their different relations a slot D⁴ is provided in said lever, so that the lever can move upon the bracket holding pin E'. It will be seen that by this means the head-frame and leg-frame can be adjusted by the occupant of the chair by simply loosening the wing-nut or other clamping device d⁴ and disposing his weight upon the parts of the chair until they assume the desired inclination, when the clamping means will be again tightened and the parts held in their adjusted position. It is thus possible for the occupant of the chair to adjust the same to any desired position without getting out of the chair, and the adjustment of the head and leg frames is accomplished by the single clamping device convenient to the hands of the occupant and perfectly simple in its operation.

The chair may be supported upon any suitable legs, but preferably upon the construction shown in the drawings, wherein the opposite sets of legs F are pivoted to the outer ends of the cross-rods A', and the legs of each set are connected together by cross-braces F'.

In order to vary the elevation of the seat portion of the chair or the inclination of its opposite ends, the legs upon each side are connected together, so that they can be adjusted toward and from each other or simultaneously inclined in either direction. The adjustment toward and from each other is effected by means of bars G, pivoted at G' to each leg and provided at their meeting ends with a series of apertures G², through which a clamping-bolt H, provided with a wing-nut or other suitable clamping device, will pass. This clamping-bolt H is provided with a suitable head upon its inner end, which will bear against the inner face of the bracket E, and the said bolt is adapted to travel in a curved slot E³ formed in the lower portion of the bracket. To effect the adjustment of the legs toward or from each other, the bolt H will be passed through the different apertures G² in the bars G, and by this means the elevation of the seat-frame may be effected. When it is desired to elevate or depress either end of the seat-frame, the wing-nut H' will be loosened and the legs simultaneously shifted to such an inclination as will elevate either end of the seat-frame, as may be desired. It will be observed that as the legs rest upon the floor or other foundation the upper ends thereof will travel in a curved or segmental course when the inclination of the legs is changed in either direction from a vertical line. For illustration reference is made to the diagrammatic view in Fig. 4, where the legs occupy substantially the position shown in Fig. 1. The vertical lines 1 1 in this figure indicate the center or highest point of the arc through which the pivotal point of the leg will pass, and the legs are adjusted upon opposite sides of these central lines. Now if the legs be tilted in unison toward the left the upper end of the leg at the right will traverse the line 2 2 in a descending curve, thus lowering that end of the seat-frame. Simultaneous with this movement the leg at the left of the seat-frame traverses the line 3 3 and ascends to the highest point of its travel, thus elevating the left end of the chair and bringing the seat level upon an inclination indicated by the line 4 4. A movement of the legs simultaneously toward the right will effect just the opposite operation and tilting action to that previously described. It will thus be clearly seen that the adjustment of the legs toward and from each other will effect in different manners the inclination to be attained by the swinging of the legs in unison, such difference in inclination being relative to the positions of the pivots of the legs in relation to a straight line passing through the bottom or bearing-point of the legs.

The legs may rest upon a foundation of any suitable character or may be provided with wheels to constitute a rolling chair, as illustrated by dotted lines in Fig. 2. The bracket for pivoting and guiding the controlling-lever for the back and leg frames is capable of ap-

plication to any form of chair having movable members operating in a similar manner. The upper portion of this bracket may be provided with apertured ends E⁴, to which a suitable arm-rest I may be applied. Such a rest is indicated in full lines in Fig. 2 and by dotted lines in Fig. 1. The back, seat, and leg frames are covered by any suitable fabric J, which is secured in position so as to afford a strong yielding support for the occupant of the chair. The head-frame is also provided with a cross-bar or handle K, which is supported beyond the back of the frame by means of braces K', secured to the frame. This handle is located substantially midway of the head-frame, and is thus entirely out of the way when the parts are adjusted into the position shown in Fig. 2, and the handle or bar K when in this position is much more convenient for lifting the chair either in the position shown in Fig. 2 or when it is desired to move the same up and down stairs. The leg-frame is also provided with a cross-bar or handle K², which is held in position by clips K³, which surround the same at opposite sides. The back-frame is provided with cross-braces J' of any suitable construction, and these are curved away from the plane of the back, so as to permit the fabric covering to yield without coming into contact with the metal braces.

At the upper end of the back-frame a head-rest L is provided and pivoted at opposite sides to the side bars of the back-frame. The fabric covering for the frame is secured to this head-rest, and when the chair is used in the position shown in Fig. 2 the head-rest L is inclined to form a head or pillow support, and this inclination is controlled by means of the sliding arms L', provided with slots L² at their lower ends and pivoted to said head-rest at their upper ends, as shown at L³. A suitable pin or bolt passes through the slot L², and a wing-nut or other suitable device L⁴ is applied to this pin or bolt and bears against the lower end of the arm L'. These arms are applied upon opposite sides of the head-rest and hold it firmly in any of its adjusted positions, while the slot in the lower portion of the arm and the pivotal connection at the upper portion permit the head-rest to be inclined in any desired position upon the pivots provided therefor in the sides of the back-frame C.

At the lower portion of the leg-frame a foot-rest M is pivotally mounted upon a cross-bar or handle K² by means of straps M', embracing said bar. This foot-rest is held in the position shown in Fig. 1 by means of hooks M², pivoted upon the foot-rest M and engaging at their outer ends with a pin or projection M³ carried by the side bars of the leg-frame. A second pin or projection M⁴ is provided adjacent to the end of the side bar, with which the hook M² will engage when the foot-rest M is folded into a plane parallel with the plane of the leg-frame, as shown in Fig. 2. This simple arrangement of hook and pin permits the adjustment and firm holding of the foot-rest

in either of the positions illustrated by simply engaging the hook with the pins or projections.

A removable shelf N is secured beneath the seat-frame by means of hangers N', which are pivotally mounted upon the shelf to fold thereon when the same is removed. This shelf may be used to support a receptacle beneath an aperture J² formed in the fabric of the seat portion J. A table O may be secured to the arms by side pieces O', as indicated by dotted lines in Fig. 2.

Beneath one of the arm-rests I a pivoted desk I' is secured by means of a pivot I², passing through the arm-rest, which desk may be provided with suitable compartments I³ for the retention of writing materials. The pivoting of this desk permits the same to be swung entirely beneath the arm and out of the way when not in use, and when it is desired to use the same it may be brought into convenient position, as indicated by dotted lines in Fig. 1. For the purpose of particularly adapting the chair for use by a person having an injured or broken leg I have provided a supporting attachment adapted to support the leg in the proper position when the chair is used. This attachment is illustrated in Fig. 3 as applied to the leg-frame of the chair. It consists of the rest P, which is composed of bars P', suitably connected together and covered with any desired fabric. The lower ends of these bars are secured to a cross-piece P², which at its opposite ends fits in sockets Q, located upon the side bars of the leg-frame B. From the upper end of the bars P' a bail P³ extends, upon which a hook P⁴ is pivoted. This hook is adapted to engage a socket Q', located upon the inner face of the side bars of the leg-frame. One of these sockets P' is located upon each side, so that the rest may be used upon either side of the leg-frame. It will be seen that this leg-rest can be quickly and readily removed whenever desired and the chair adapted for its ordinary uses.

The operation of the several parts will be clear from the foregoing description, and it is obvious that numerous changes may be made in the details of construction and configuration of the several parts without departing from the spirit of the invention, as defined by the appended claims.

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

1. In a convertible chair, the combination with a seat-frame, of pivoted back and leg frames, a pivoted lever slotted at its pivotal connection with said seat-frame, connections extending from said lever to the back and leg frames, a horizontally-disposed way carried by the seat-frame adjacent to said lever, and means for clamping said lever at its adjusted position in said way; substantially as specified.

2. In a convertible chair, the combination

with a seat-frame, of pivoted back and leg frames, a pivoted lever slotted at its pivotal connection with said seat-frame, connections extending from said lever to the back and leg frames, a bracket carried by said seat-frame adjacent to said lever and having a horizontally-disposed slot, and means at one end of said lever traveling in said slot to clamp said lever thereto; substantially as specified.

3. In a convertible chair, the combination with a seat-frame, of pivoted back and leg frames, a slotted lever, a pivot for said lever located in said slot, links connecting the opposite ends of said lever with the back and leg frames, a bracket provided with a horizontal slot, and clamping means at one end of said lever traveling in said slot and adapted to clamp said lever in contact with said bracket; substantially as specified.

4. In a convertible chair, the combination with a seat-frame, of back and leg frames pivoted thereto, a bracket provided with a horizontal slot at its upper portion, a pivoted lever provided with a centrally-disposed slot, links pivoted to the opposite ends of said lever and to said back and leg frames, and clamping means extending through the slot in said bracket and the upper end of said lever; substantially as specified.

5. In a convertible chair, the combination with a seat-frame, of back and leg frames pivoted thereto, a bracket provided with a horizontal slot at its upper portion and a curved slot at its lower portion, a pivoted lever provided with a centrally-disposed slot, links pivoted to the opposite ends of said lever and to said back and leg frames, clamping means extending through the horizontal slot in said bracket and the upper end of said lever, pivoted legs, apertured bars connected to said legs and adjustably connected at their free ends, and a clamping-bolt passing through said bars and the curved slot in said bracket; substantially as specified.

6. In a convertible chair, the combination with a seat-frame, of pivoted legs, apertured bars pivoted to said legs and overlapping each other at their free ends, a bracket supported by the seat-frame and provided with a slot, and a clamping-bolt passing through said bracket and the apertures in the adjusting-bars; substantially as specified.

7. In a convertible chair, the combination with a seat-frame, of pivoted legs extending upon opposite sides of a central line through said legs, a bar connecting said legs for simultaneously oscillating said legs in the same direction, and a clamp for retaining said legs and bar in their adjusted positions; substantially as specified.

8. An adjusting-bracket for a convertible chair having an upwardly-extending portion provided with a horizontally-disposed straight slot and a depending portion provided with a horizontally-disposed curved slot; substantially as specified.

9. In a convertible chair, the combination with a seat-frame, of back and leg frames pivoted thereto, a bracket secured to said frame, a pivoted slotted lever, links extending from said lever to the back and leg frames, a clamping-bolt extending through a slot in said bracket and the upper end of said lever, pivoted legs, connecting-bars extending from said legs, and a clamping-bolt extending through a slot provided in said bracket and through said connecting-bars; substantially as specified.

10. In a convertible chair, the combination with a seat-frame, of pivoted back and leg frames, a pivoted lever slotted at its pivotal connection with said seat-frame, connections extending from said lever to the back and leg frames, a horizontally-disposed way carried by the seat-frame adjacent to said lever, means for clamping said lever at its adjusted position in said way, a head-rest pivoted to swing to the front or rear of said back-frame, an arm pivoted to said head-rest and extending parallel with the side of the back-frame, and means for holding said arm at its adjustment; substantially as specified.

11. In a convertible chair, the combination with a seat-frame, of pivoted back and leg frames, a pivoted lever slotted at its pivotal connection with said seat-frame, connections extending from said lever to the back and leg frames, a horizontally-disposed way carried by the seat-frame adjacent to said lever, means for clamping said lever at its adjusted position in said way, a head-rest pivoted to swing to the front or rear of said back-frame, an arm independently pivoted to said head-rest and provided with a slotted end extending parallel with the side of said frame, and a clamping-bolt and nut adapted to clamp said arm in contact with the side of the back-frame; substantially as specified.

12. In a convertible chair, the combination with a seat-frame, of back and leg frames pivoted thereto, a bracket provided with a horizontal slot at its upper portion, a pivoted lever provided with a centrally-disposed slot, links pivoted to the opposite ends of said lever and to said back and leg frames, clamping means extending through the slot in said bracket and the upper end of said lever, a cross-bar or handle secured to the lower end of said leg-frame, a foot-rest carried by said cross-bar, pivoting-straps located between the sides of the frame and connecting the rest and frame, spaced projections upon the side of said leg-frame, and a pivoted hook carried by the foot-rest and adapted to engage said projections when said foot-rest is in its adjusted positions; substantially as specified.

13. In a convertible chair, the combination with a leg-frame provided with sockets, of an

angular leg-rest, composed of pivoted members each of which carries hooked projections to engage said sockets substantially as specified.

14. In a convertible chair, the combination of a leg-frame provided with sockets, a leg-rest composed of vertical and horizontal members pivoted together, a cross-bar provided with projections to enter said sockets, and a hook pivoted upon said horizontal portion of the leg-rest and adapted to enter a socket located upon the leg-frame; substantially as specified.

15. In a convertible chair, the combination with a seat-frame, of a bracket provided with horizontal lugs at its upper portion and slots at its upper and lower portions, an arm-rest secured to said lugs, pivoted back and leg frames, adjusting means for said back and leg frames traveling in the upper slot of said bracket, pivoted legs, and adjusting means for said legs pivoted in the lower slot of said bracket; substantially as specified.

16. In a convertible chair, the combination of a seat-frame, pivoted back and leg frames, a bracket secured to said seat-frame and provided with a slot, an adjusting-lever, connections extending from the opposite ends of said lever to said back and leg frames, and clamping-nuts located upon the inner end of said bolts adjacent to the occupant of the chair; substantially as specified.

17. In a convertible chair, the combination with a seat-frame, of pivoted back and leg frames, a pivoted head-rest at the upper end of said back-frame, a pivoted foot-rest at the lower end of said leg-frame, a slotted pivoted lever and connecting-links for adjusting and holding said back and leg frames at different inclinations, and a clamping device at one end of said lever to secure the same to a support carried by the seat-frame; substantially as specified.

18. In a convertible chair, the combination with a seat-frame, of pivoted back and leg frames, a pivoted head-rest at the upper end of said back-frame, a pivoted foot-rest at the lower end of said leg-frame, a clamping-support upon the seat-frame, means for adjusting and holding said back and leg frames at different inclinations, pivoted legs, means for adjusting said legs toward and from each other, and means for simultaneously oscillating or swinging said legs in the same direction; substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JESSE A. CRANDALL.

Witnesses:

NOAH TEBBETTS,

WM. H. CUNNINGHAM.