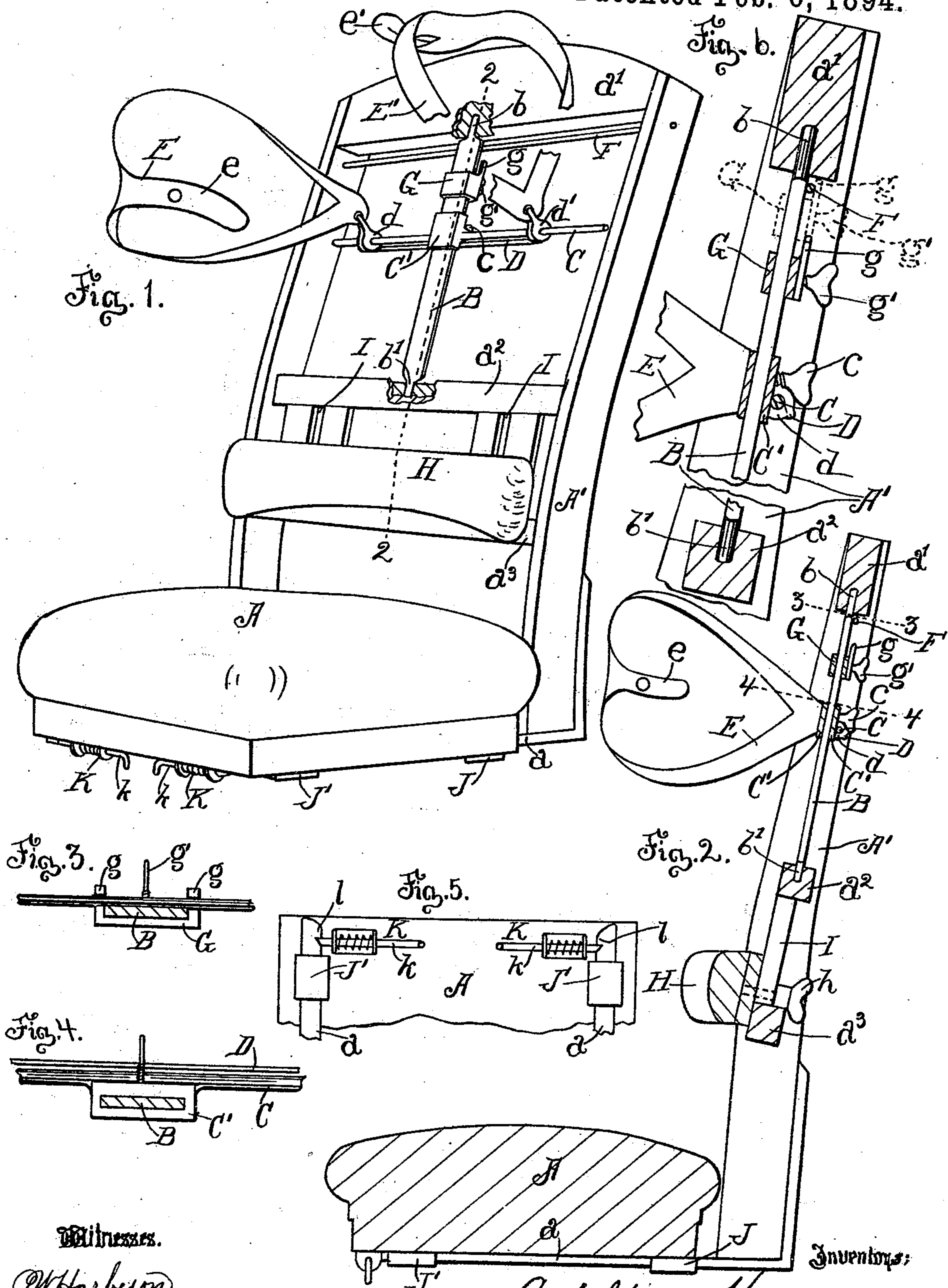


(No Model.)

L. HARVEY & J. AMOS.
SHOULDER AND BACK BRACING CHAIR.

No. 514,189.

Patented Feb. 6, 1894.



Witnesses.

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UNITED STATES PATENT OFFICE.

LEOPOLDINA HARVEY AND JACOB AMOS, OF LOS ANGELES, CALIFORNIA,
ASSIGNORS OF ONE-THIRD TO JOHN VORWERK, OF SAME PLACE.

SHOULDER AND BACK BRACING CHAIR.

SPECIFICATION forming part of Letters Patent No. 514,189, dated February 6, 1894.

Application filed August 29, 1893. Serial No. 484,333. (No model.)

To all whom it may concern:

Be it known that we, LEOPOLDINA HARVEY and JACOB AMOS, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Shoulder and Back Bracing Chair, of which the following is a specification.

Our invention relates to chairs having shoulder bracing appliances secured to their backs.

The object of our invention is to provide improved chair appliances adapted to brace the occupant of the chair in an upright position.

Our invention is specially applicable to piano stools and typewriters' chairs but can also be applied in the apparatus for the treatment of those mentally incompetent such as idiots and insane persons where it is desired to have them sit in an upright position. It can also be applied to seats for pupils and others sedentarily employed to hold such person in an upright position.

The accompanying drawings illustrate our invention.

Figure 1 is a perspective view of the seat of a piano stool with our chair back in position for use. The rails of the back are broken to show journals of the upright shaft. Fig. 2 is a vertical section of the same on the line indicated by 2—2, Fig. 1. Fig. 3 is a fragmentary transverse section looking down on line 3—3 of Fig. 2. Fig. 4 is a fragmentary transverse section looking down on line 4—4 of Fig. 2. Fig. 5 is a detail showing the front edge of the under side of the stool seat shown in Fig. 1. Fig. 6 is an enlarged detail of the upper part of Fig. 2.

Our invention comprises the combination with the chair seat A and the stationary back A' fixed to such seat, and provided with the back supporting cross rail α' and the shaft supporting cross rail α^2 of the upright rotatable shaft B journaled in the cross rails α' and α^2 of the chair-back at or near the midwidth thereof, and adapted to rotate with relation to the back and its cross-rails, and cross bar C secured to and carried by such upright shaft and adapted to rotate therewith, a sliding bar D arranged to slide back and forth

upon the cross-bar, and straps E E' or other suitable fastenings secured to the cross-bar through the medium of such sliding bar and adapted to fasten the shoulders of the occupant of the seat to the cross-bar so that the occupant of the chair will be held in an upright position thereby but will be allowed freedom to turn the body and to shift the body sidewise while, at the same time the chair-back remains stationary so that when the occupant presses against it, it will tend to bring him to a proper straight and upright position and prevent any careless position or any leaning to one side, unintentional deflections or turning from the position desired to be normally maintained.

Our invention also comprises the combination with the elements above specified, of a suitable spring, such as the spring rod F arranged across the back to engage the upright B and hold it in position with the cross-bar C in line with the plane of the chair back as shown in Figs. 1 and 2, but to allow the upright to be turned under suitable pressure thus to allow the body to be turned while the straps are caused to exert a constant pressure to return the body to its normal position, with the shoulders parallel with the chair back. As shown, the upright B is flat at the point where it rests against the spring rod F so that the partial rotation of the upright will cause the spring rod F to be sprung out of its normal position with the cross bar extending crosswise the chair-back.

It is sometimes desirable to hold the occupant of the chair rigidly erect without giving the freedom of movement that is given when the upright is partially allowed to rotate and for this purpose we provide the sliding clamp G which is provided at its upper end with the spring rod receiving bracket g adapted to embrace the spring rod F and thus clamp the pivoted upright and the spring rod together so that the upright will be prevented from rotating. When it is desired to allow the upright to rotate, the clamp is lowered into the position indicated in Figs. 1 and 2. g' is a thumb screw to hold the clamp G in place on the upright.

To adapt the same appliance for use for children of different ages or for use for the

child at different stages of growth, we adjustably secure the cross-bar C to the upright B. This is done by means of the cross-bar clamp C' which clamps upon the upright and to which the cross-bar C is attached. This clamp is held in its position on the upright by the thumb screw c. When the thumb screw is loosened, the clamp can be slid up and down along the upright thus to adjust the cross bar to the proper height.

d d' indicate the journals of the sliding bar D. When the occupant of the chair sways his body sidewise the sliding bar slides along the rod C until the journal piece d or d' engages the clamp C'. This allows sufficient latitude of movement for swaying the body.

H is a cushion for the small of the back, and is made vertically adjustable by means of set screws h which are secured to the cushion and play vertically in the guide ways I I secured to the back of the chair. Only one of these screws h are shown but it is to be understood that there is one for each guide way and that we do not limit ourselves to the number of screws for securing the cushion nor to any particular means for securing the cushion in place.

As shown, the vertical guideways I I, along which the securing screws h slide are fixed to the lower cross rail a^2 and a bottom cross rail a^3 of the chair back. The vertical shaft B is provided at its respective ends with journals b b' . The upper journal b is seated in the upper cross rail a' and the lower journal b' is seated in the cross rail a^2 . In practice the cushion is adjusted vertically and the cross bar C, is also adjusted vertically and the cushion and cross bar are thus arranged vertically with relation to each other and operate in conjunction with each other to secure perfect ease combined with a firm support for the shoulders.

In order to adapt our invention for convenient attachment to any piano stool we provide the chair back A at its lower end with horizontal arms a and we provide sockets J J' on the under side of the seat of the stool to receive the arms a and thus secure the back to the seat. Suitable automatic catches or locking devices K are provided to automatically catch and secure the arms in position when fully seated in the sockets. As shown these locking devices consist of a spring pressed bolt k and a catch l on the arm with which the bolt engages.

In practice the chair back is fixed in place by inserting its arms a into the sockets J J' and allowing the bolts to shoot into position to engage the catches l . Then the shoulder straps E E' are placed around the shoulders of the occupant and secured by the breast straps e e' . Then if the occupant is to be given freedom of movement, the clamp G is allowed to be in the position free from the spring rod F as indicated in Figs. 1 and 2. The cross-bar C is adjusted to the proper height and secured in that position by turn-

ing the thumb screw c to clamp against the upright B. The back cushion H is also adjusted to the proper height and secured by the thumb screw h . The appliance will hold the occupant in an erect position but will give such freedom for swaying and turning the body as may be necessary in playing a piano, operating a typewriter or performing other sedentary occupations.

When it is desired to hold the body more rigid the clamp G is slid up into position so that its bracket g will receive the spring rod F thus to prevent the upright from rotating.

If it is desired to use the piano stool without the bracing back the bolts k k are withdrawn from their engagement with the arms a and the arms are withdrawn from their sockets thus releasing the back from the stool.

Now, having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with the chair seat and the stationary back fixed thereto and provided with the back supporting cross-rail, of an upright shaft journaled to the back at or near the midwidth thereof under such cross-rail and adapted to rotate with relation to the back and the cross-rail, a cross-bar secured to and carried by such upright shaft and suitable shoulder fastenings secured to the cross-bar.

2. The combination with the chair seat and the stationary back provided with the back supporting cross-rail, of an upright shaft journaled to the back below the cross-rail at or near the midwidth of the back, a cross-bar secured to and carried by such upright shaft, a sliding bar arranged to slide upon the cross-bar and suitable shoulder fastenings secured to such sliding bar.

3. The combination with the chair seat and back of an upright shaft pivoted to the back at or near the mid-width thereof, a cross-bar secured to such upright shaft, a spring arranged to maintain the shaft in normal position with the cross-bar in line with the plane of the back, and suitable shoulder fastenings secured to the cross-bar.

4. The combination with the chair seat and back of an upright shaft pivoted to the back at or near the mid-width thereof, a cross-bar secured to such upright shaft, a sliding bar arranged to slide upon the cross-bar, a spring arranged to hold the shaft in its normal position with the cross-bar in line with the plane of the back, and suitable shoulder fastenings secured to the sliding bar.

5. In a shoulder and back bracing chair, the combination of the seat and back; the spring rod arranged across the back; the upright shaft journaled to the back intermediate its edges, provided with the cross-bar and shoulder fastenings and having a flat face arranged to engage the spring rod.

6. In a shoulder and back bracing chair, the combination of the seat and back; the spring rod arranged across the back of the chair, the

upright shaft journaled to the chair-back intermediate its edges and provided with the cross-bar and shoulder fastenings and with the flat face arranged to engage the spring rod, and the clamp arranged upon the pivoted shaft and adapted to clamp the rod against the shaft.

7. In a shoulder and back bracing chair, the combination of the seat, the stationary back secured to the seat and provided with a back supporting cross rail, the cross-bar secured to such back below such cross-rail by suitable means adapted and arranged to rotate in a horizontal plane, such means, and suitable shoulder fastenings for securing such cross-bar to the shoulders of the occupant of the chair.

8. A shoulder and back bracing chair comprising, in combination, the seat, the stationary back secured to the seat and provided with a back supporting cross-rail, the rotatable cross-bar secured to such chair-back below such cross-rail by suitable means adapted to rotate in a horizontal plane, such means, means for vertically adjusting such cross-bar, suitable shoulder fastenings secured to such bar, and a vertically adjustable back cushion secured to the chair back.

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