(No Model.)

# C. E. DAVIS.

## SPRING BACK PIANO CHAIR.

No. 354,183. Patented Dec. 14, 1886.

FIG: 1.

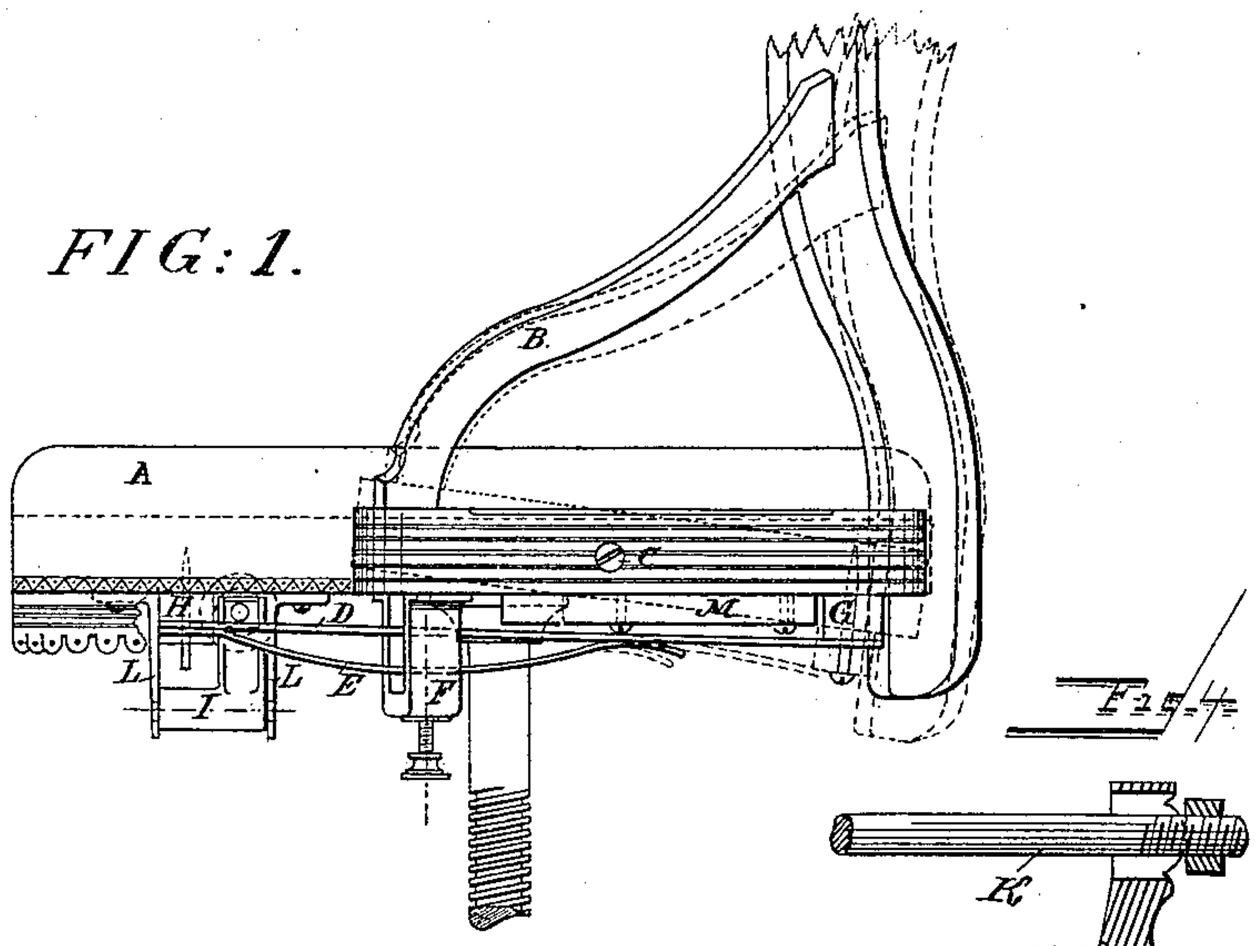



FIG: 2.

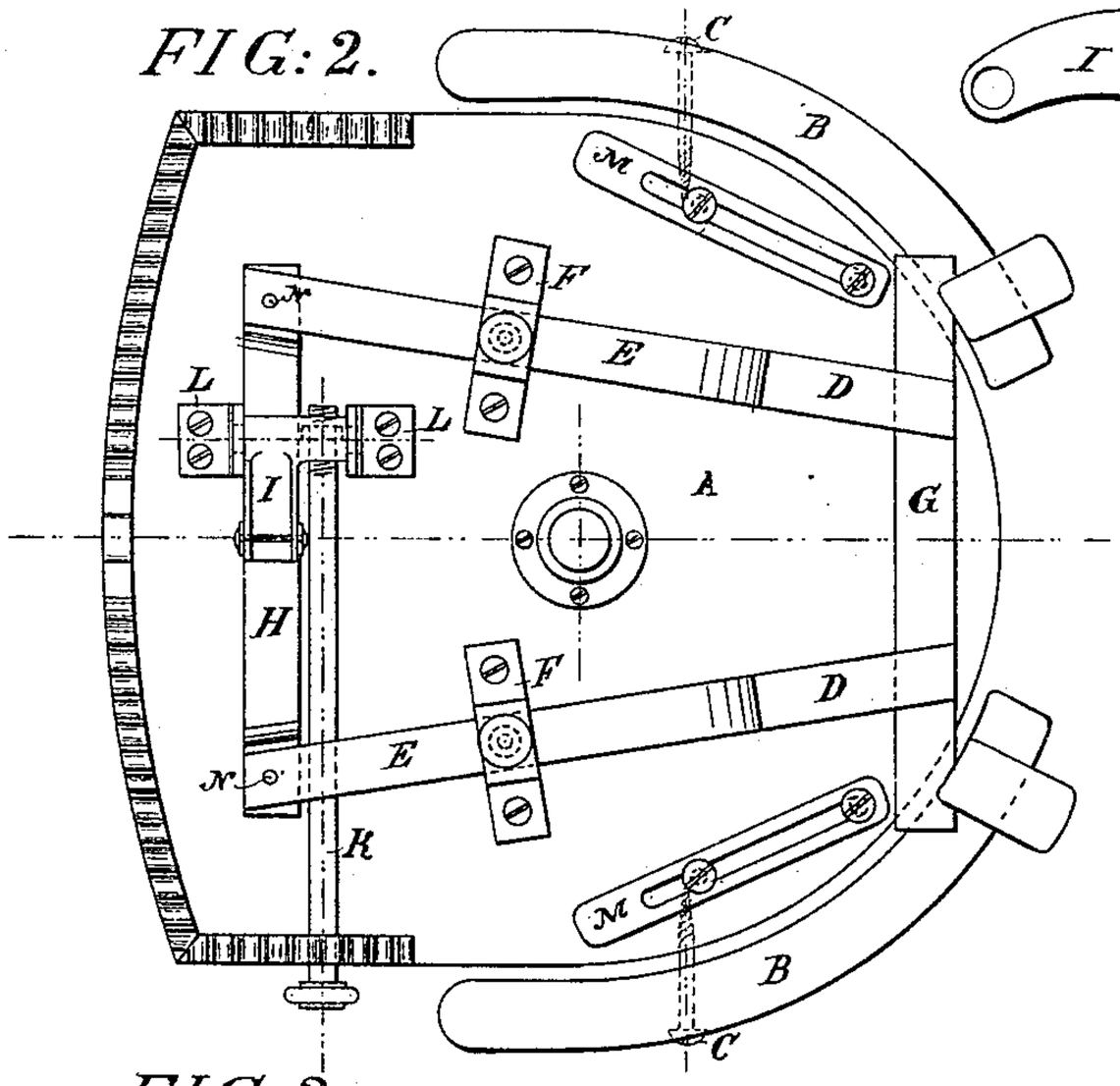
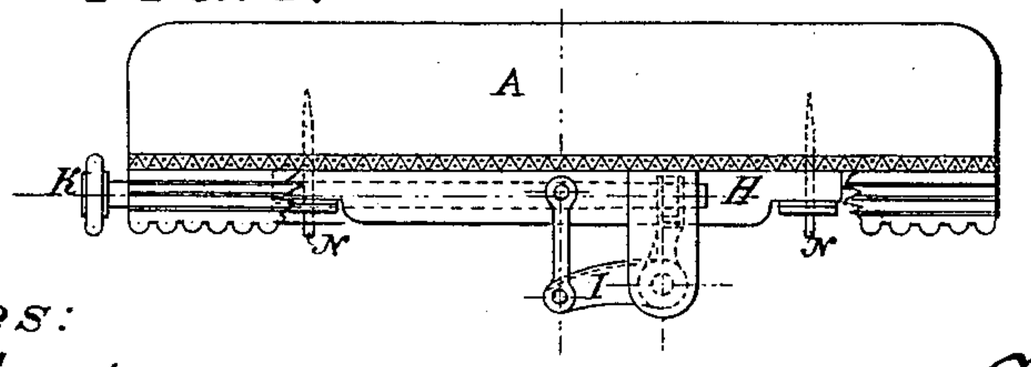



FIG: 3.

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# UNITED STATES PATENT OFFICE.

CHARLES E. DAVIS, OF COLUMBUS, OHIO.

## SPRING-BACK PIANO-CHAIR.

SPECIFICATION forming part of Letters Patent No. 354,183, dated December 14, 1886.

Application filed March 31, 1885. Serial No. 160,728. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. DAVIS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented new and useful Improvements in Adjustable Spring-Back Piano-Chairs, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

The objects of my improvements and invention are to form a perfect adjustable back-rest attached to and forming a part of a chair for use as a parlor-chair, and also by persons in playing or practicing on the piano-forte, the back-rest being so formed, adjusted, and operated that the piano-player when sitting erect on the chair will be leaning against the back-rest, which will at the same time be pressing against the player's back with more or less force, as desired, and will also follow the movements of the player's body forward or backward, thus enabling the player in any position assumed in playing to constantly lean against and be supported by the back-rest, the degree of pressure of the back-rest against the player's back and of its resistance to backward movements of the player's body being regulated by the player while seated in the chair. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a side view of a section of the chair—viz., a part of the back of the chair which constitutes the back-rest, a side piece, B, attached at one end to the bottom of the back-rest or chair-back and extending forward along the side of the seat, an arm one end of which is attached to the side of the back-rest about midway between the top and bottom and the other end of which is attached to the front end of the side piece, the upholstered chair-seat with the attachments underneath designed to operate and regulate the back-rest, and the screw extending downward from the center, by which the seat is attached to the three or four legged base in the same way that the seat of a piano-stool is generally attached to its base. Fig. 2 represents the bottom or under side of the seat turned upside down, showing the attachments for operating and regulating the back-rest as they appear from beneath. Fig. 3 represents the front of the chair-seat with the attachments underneath for regulating the degree of pressure of the back-rest against the player's back and of its resistance to backward movements of the player's body, the attachments being operated by the player while seated on the chair; Fig. 4, an enlarged view in detail of the bell-crank lever for operating the adjusting cross-bar, upon which the ends of the supporting-springs are adapted to bear.

Similar letters refer to similar parts throughout the several views.

The back of the chair, constituting the back-rest, is joined to the chair-seat A by and swings upon two pivots, C, one on each side of the seat passing through the side piece, B, that extends on each side from the lower end of the back-rest forward alongside of the seat. Secured to the front side of the lower end of the back-rest, and fitting under the back end of the seat, is a cross-piece, G, which rests upon, but is not attached to springs, each spring composed of two leaves, D and E, one leaf, D, being straight or flat, and the other, E, curved, as shown in Fig. 1, the latter being the shorter. The two leaves are held in place at one end by the pin N, and rest against the under side of the cross-bar H, the pin N passing down from the bottom of the seat through the cross-bar H and the two leaves of the spring, thus preventing any lateral movement of either, but leaving both the cross-bar H and the end of the springs free to move up or down on the pin N. The leaves of the springs are also retained in position, one directly over the other, by means of a cast-iron cleat, F, similar in form to a capital letter, U, the open end of which is secured to the bottom of the seat by screws, the two leaves of the spring passing between and being inclosed by the two arms or sides of the attachment, which serve as guides, and the lower leaf, E, resting on the end of a thumb-screw, which passes up through the bottom or closed end of the attachment F, and by means of which the strength or stiffness of the spring is regulated.

As the back-rest swings upon the pivots C, and rests upon and is supported by the springs, any pressure backward upon the back-rest depresses the ends of the springs upon which

the cross piece G rests, and the stiffness or resistance of the springs will be increased or diminished by turning the thumb-screw in the attachment F, so as to raise or lower the leaf E of the spring, and thereby increase or diminish its upward pressure against the leaf D, and the upward pressure of the latter against the cross-piece G. The stiffness or resistance of the springs is also regulated by means of the mechanism shown in Figs. 2 and 3, consisting of a right-angle lever or bell-crank, I, pivoted in the lower ends of two parallel iron hangers or bearings, L, that are secured to and extend downward from the bottom of the seat, one arm of the lever or crank extending to the right directly under and parallel with the cross-bar H, to which it is secured, either by means of a small bar or strap riveted to the end of the arm, and also to the bar H, or by means of a wire loop passed through the end of the arm and around the cross-bar, and the other arm of the lever or crank, extending upward between the standards, and the lever or crank being operated by means of a common bolt, K, on the outer end of which, at the right side of the seat, is a knob, and on the inner end a nut and thread, the nut being countersunk and stationary in the upper end of the arm of the lever or crank, so that in turning the bolt (by means of the knob) forward the arm of the lever or crank is drawn toward the right side, depressing the other arm of the lever or crank and drawing the cross-bar H, together with the ends of the springs, downward, thus increasing the upward pressure of the other end of the springs against the cross-piece G.

On each side of the bottom of the seat, between the springs and the outer edge of the seat, is a slide, M, held in position by screws passed through a slot in the center of the slide and screwed into the bottom of the seat in such a way that when the chair is not in use at the piano the slides can be pushed backward between the cross-piece G and the bottom of the seat, thus depressing the back-rest to the position shown by the dotted lines in Fig. 1, making the chair more suitable for a parlor chair.

I do not herein broadly claim a chair having a stationary seat provided with a pivoted back, supported by springs provided with adjusting devices.

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

1. A tilting chair provided with a pair of springs each consisting of a straight flat leaf and a curved under leaf, said springs passing through cleats provided with vertical set-screws upon the ends of which said springs bear, one end of each spring also resting upon a vertically-adjustable bar and the other end supporting the back of the chair, substantially as described.

2. In a tilting chair, a spring-back pivoted to the sides of a stationary seat, in combination with adjustable springs secured to the under side of said seat and the slides, substantially as described, for securing the back in a tilted position, as specified.

3. A chair provided with a tilting back pivoted to the sides of a stationary seat, and springs upon the under sides of said seat, upon which the back is adapted to rest, said springs passing through cleats provided with adjusting-screws, in combination with a cross-bar operated vertically upon guide-pins by means of an adjusting-bolt, the front ends of said springs being adapted to rest upon said cross-bar, substantially as described.

4. A chair provided with a tilting back supported by springs provided with the herein-described adjusting device, the same consisting of a vertically-movable cross-bar located under the seat of said chair and upon which the ends of said springs are adapted to bear, guide-pins for keeping the bar in position, and a bell-crank lever pivoted below said cross-bar, one arm of said lever being connected thereto and the other arm to an adjusting-bolt, all arranged and adapted to operate substantially as described.

5. The combination, in a chair, of a stationary seat, a back pivoted to the sides thereof, flat springs upon the under side of said seat, a cross-bar extending transversely across the ends of said springs and upon which the back is adapted to rest, supporting-cleats through which said springs pass, said cleats being provided with set-screws, a cross-bar interposed between the forward ends of said springs and the bottom of said seat, guide-pins for retaining the bar, and a bell-crank lever journaled in hangers below said cross-bar, and having one arm connected therewith by means of a link and the other arm connected with an adjusting-bolt, all arranged and adapted to operate substantially as described.

In testimony whereof I have hereunto set my hand.

CHARLES E. DAVIS.

Witnesses:
J. H. REES,
FRANK A. DAVIS.