(No Model.)

C. H. SMITH.

KEY LEVELING DEVICE FOR PIANOS.

No. 401,309. Patented Apr. 9, 1889.

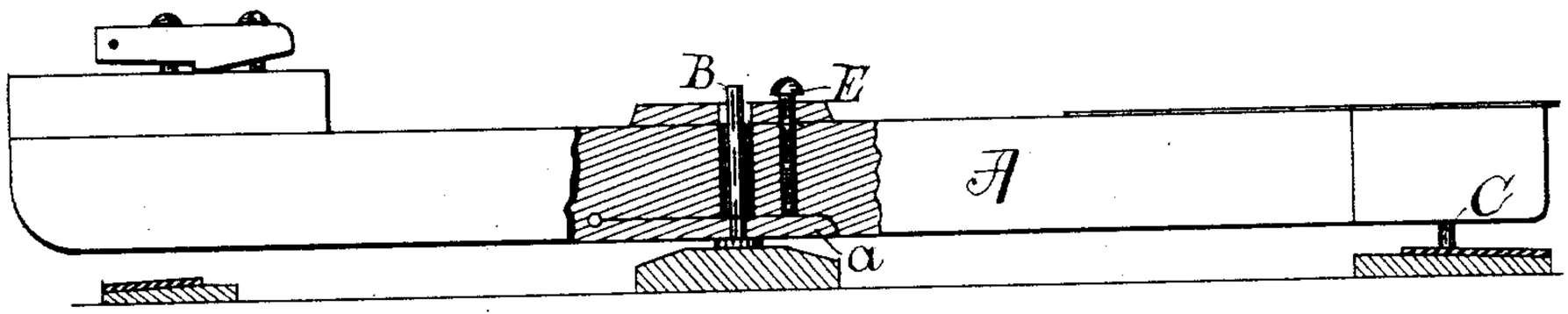

Fig. 1.

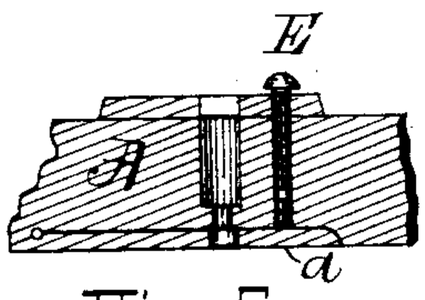

Fig. 6.

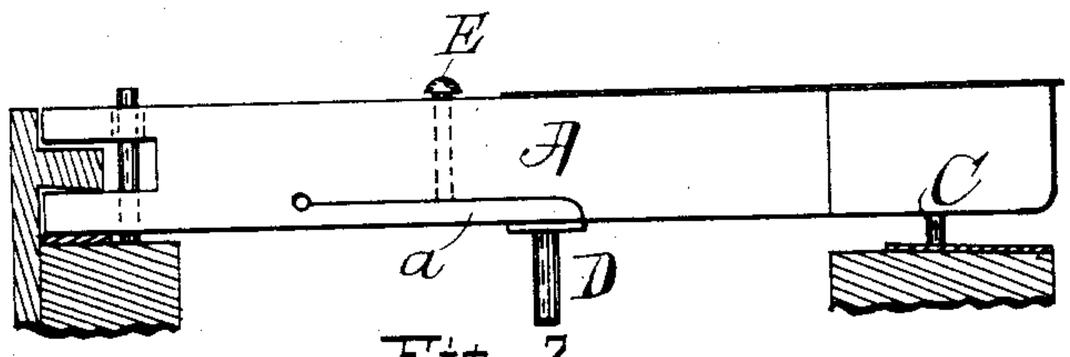

Fig. 2.

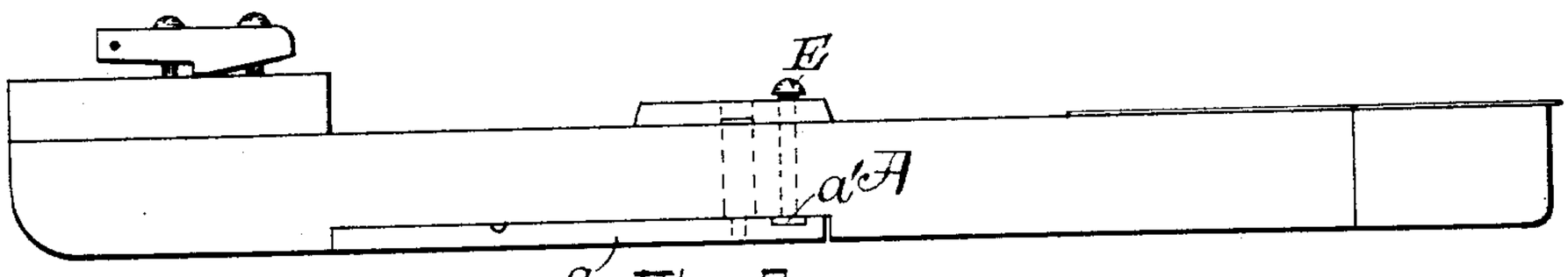

Fig. 3.

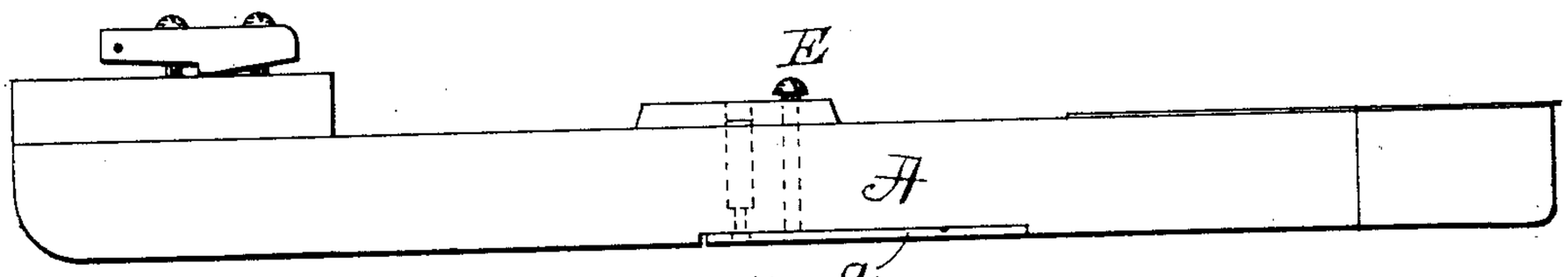

Fig. 4.

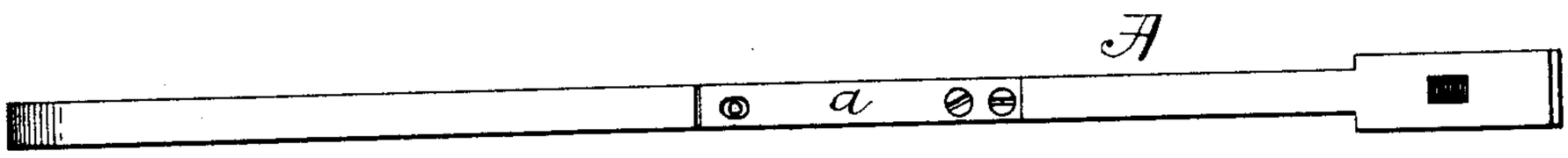

Fig. 5.

Witnesses,
A. O. Wood.
D. C. Shumaker.

Inventor,
Charles H. Smith.
By his Attorney
Albert A. Wood.

UNITED STATES PATENT OFFICE.

CHARLES H. SMITH, OF ATLANTA, GEORGIA.

KEY-LEVELING DEVICE FOR PIANOS.

SPECIFICATION forming part of Letters Patent No. 401,309, dated April 9, 1889.

Application filed March 12, 1888. Serial No. 267,043. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SMITH, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a new and useful Adjustable Piano or Organ Key; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to the adjustment of piano and organ keys as regards height, the object being to provide means to adjust more readily their outer or free ends to a uniform height. As heretofore constructed, it is necessary in pianos to put paper of various thicknesses, as required, under the felt washers on the center pins, and in organs to thicken in some way the felt cushions against which the valve-pins press, both of which processes are difficult of accomplishment and require to be often repeated. The difficulties of these adjustments are, however, entirely overcome by my invention, which consists of an adjustable central bearing on the key that will bring the free ends of the keys level when in their normal position, the particulars of which will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view of a piano-key, partly in section, showing the tongue that forms its fulcrumal bearing, and which is adjusted by a screw. Fig. 2 is a side view of an organ-key, showing the central bottom part of the key at the point where it rests on the valve-pin cut to form a tongue, which is adjusted by a screw, as shown in Fig. 1. Fig. 3 is a side view of a piano-key, showing a piece of wood inserted in the bottom of the key-lever to form the tongue and fastened at one end, the other being left free to be adjusted by the adjusting-screw. This figure also shows a piece of wood inserted crosswise to strengthen the tongue. Fig. 4 is a side view of a piano-key, showing a metal tongue inserted and the adjusting-screw placed between the center pin and the fastening of the tongue to the key. Fig. 5 is a bottom view of Fig. 4. Fig. 6 is a section of a portion of a piano-key, showing a modification of Fig. 1.

In the several figures, like reference-marks indicating corresponding parts in the several views, A is a piano-key in all the figures except Fig. 2, in which it is an organ-key.

B is the pin on which the key is pivoted, and C is the guide-pin that prevents lateral movement.

D, Fig. 2, is the valve-pin of an organ. On the bottom of the key-lever is a tongue, *a*, which may be formed in a great variety of ways, several of which are shown in the drawings.

The inner portion of the ends of piano-keys when in their normal position and of organ-keys at all times is arbitrary, the relative height of the outer ends being governed by the central bearing—in the case of pianos on the center-bar and of organs on the valve-pins. It is therefore necessary to adjust the height at that central bearing, which I do by means of the screw E, which is screwed through the key and against the tongue *a*. It is obvious that the forcing down of this tongue will raise the outer end of the key, and that it may be adjusted to the desired height without the use of paper or other lining material under the felt cushion.

The tongue *a* may be made integrally with the key, as shown in Figs. 1, 2, and 6, or it may be inserted, formed of a separate piece, as shown in Figs. 3, 4, and 5. In Fig. 3 it is shown as having considerable thickness, as would be required if made of wood, and would preferably be made of hard wood and have a strip of hard wood, *a'*, inserted, with its grain running across the tongue, for the screw to press against to prevent the splitting or warping of the tongue. The strip *a'* may be inserted in any of the other forms of tongue shown, except that in Figs. 4 and 5, which represent a metal tongue with the screw pressing against it between the end at which it is attached to the key and the end that rests on the central support of the key. Any of the other forms of tongue shown may be adjusted by a screw in the position shown in Fig. 5.

In pianos, the tongue being at the pivotal point, the hole through the tongue may fit the center pin, as shown in Figs. 1 and 3, or the

pin may fit a portion of the hole in the body of the key, as shown in Figs. 4, 5, and 6, the remainder of the hole in both cases being enlarged, as is usual, and may also be enlarged in the tongue; or the end of the tongue may be bifurcated to obviate any possibility of binding.

It is immaterial to this invention whether the tongues *a* are formed integrally with the key, as shown in Figs. 1, 2, and 6, or attached to it, as shown in Figs. 3, 4, and 5, or in any other suitable manner, so long as it is free to be adjusted by the screw E. It is also immaterial whether it be of wood, metal, or other material, so long as it performs the functions herein described.

The tongue may and preferably should be so proportioned that it will have some perceptible elasticity, in order to yield slightly and give a softness to the touch, which elasticity will prove of great advantage. This elasticity of touch is more uniform than can be obtained by any other device known to me, and the device obviates the necessity of spending so much time in leveling up the keys, which is a great saving, especially in old instruments in which nearly the whole key-board requires more or less adjustment.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

In the key of a musical instrument, the combination of the tongue *a* and the screw E, substantially as shown and described, and for the purpose specified.

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

CHARLES H. SMITH.

Witnesses:
A. P. WOOD,
ALBERT A. WOOD.