2 Sheets—Sheet 1.

C. F. T. STEINWAY.

Piano-Forte Action.

No. 204,107. Patented May 21, 1878.

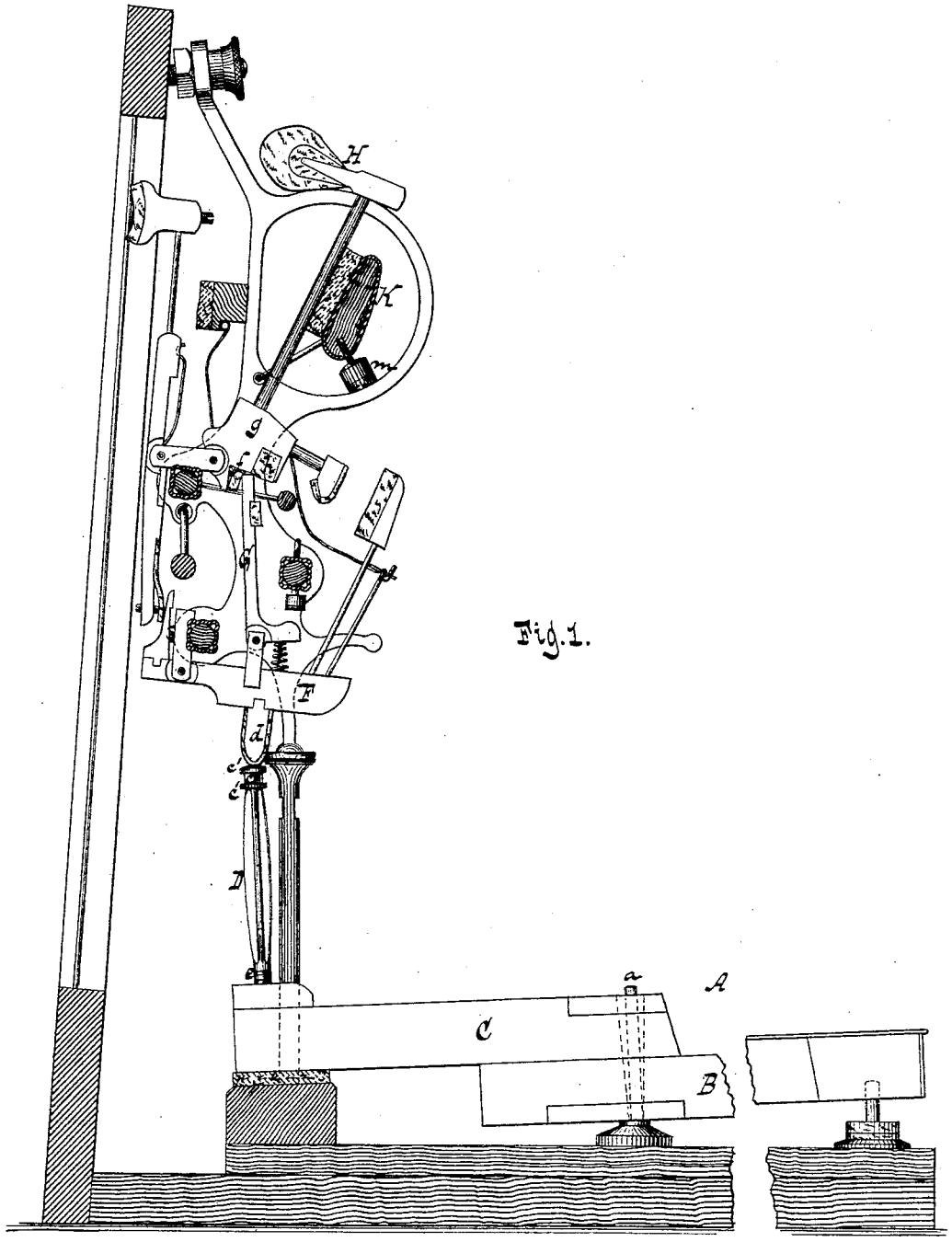

Fig. 1.

Witnesses
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Christian Friedrich Theodor Steinway
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his attorneys

2 Sheets—Sheet 2.

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Fig. 2.

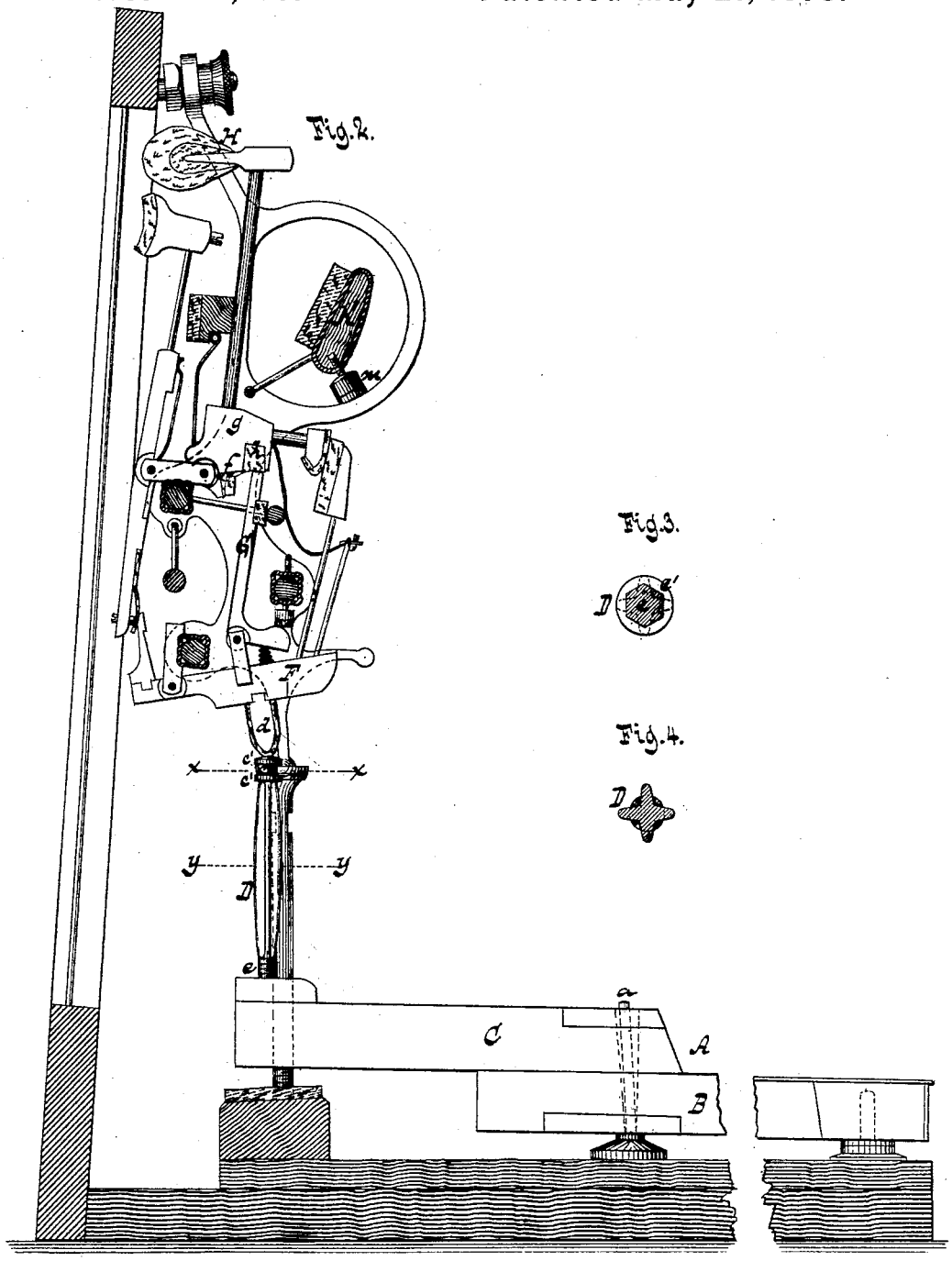

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

CHRISTIAN F. T. STEINWAY, OF NEW YORK, N. Y.

IMPROVEMENT IN PIANO-FORTE ACTIONS.

Specification forming part of Letters Patent No. **204,107**, dated May 21, 1878; application filed March 20, 1878.

To all whom it may concern:

Be it known that I, CHRISTIAN FRIEDRICH THEODOR STEINWAY, of the city, county, and State of New York, have invented a new and useful Improvement in Piano-Forte Actions, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a sectional side view of my action when the same is at rest. Fig. 2 is similar view of the same when the key is depressed. Fig. 3 is a transverse section of the pilot in the plane *x x*, Fig. 2. Fig. 4 is a similar section in the plane *y y*, Fig. 2.

Similar letters indicate corresponding parts.

This invention consists in the combination, in a key for piano-fortes, of two sections, the inner section being placed on the top of the outer section, so that the depth of the socket which receives the guide-pin of the key is increased and the distance between the inner end of the key and the jack-lever of the action is reduced; further, in a pilot which is cast of brass or other suitable metal, and the body of which is provided with fins and with a head of square or polygonal form, so that by means of a wrench applied to said head the pilot can be readily screwed into the key and adjusted to the proper height, and by means of the fins the body of the pilot is stiffened without increasing its weight to an undue proportion; also, in the combination of a regulating-pad, provided with a soft cushion on one side and an adjusting-screw on the other side, with the soft-pedal rail or tube or its support, for the purpose of regulating the position of the soft pedal toward the hammers.

In the drawings, the letter A designates a piano-forte key, which is constructed of two sections, B C, the inner section C being secured on the top of the outer section B, as shown in Figs. 1 and 2 of the drawings. By this arrangement several advantages are gained: In the first place, each section of my key is comparatively short, and they can be made of pieces of wood which in the manufacture of ordinary keys of the full length is wasted, so that the cost of my new key is reduced; secondly, by placing the two sections one on top of the other the depth of the socket which receives the guide-pin *a* of the key is increased, so that the key is not liable to roll laterally, and the pilot D, secured to the inner end of the key, retains its proper relation in regard to the jack-lever; thirdly, the inner end of the key which supports the pilot is raised, and the length of the pilot can be proportionately reduced without raising the key-board to an inconvenient height.

Heretofore the use of pilots in upright pianos has been practiced only in pianinos, or upright pianos with short strings. In the larger classes of upright pianos the distance between the inner ends of the keys and the jack-levers was too great for the employment of pilots, since such pilots would have to be made so long that the slightest rolling motion of the keys would throw them out of the proper position; and it has been found necessary to employ in such actions a complicated and costly mechanism having extra under work.

The pilot D which I use is cast of brass or other suitable metal, and it is provided with a head, *c*, which bears against the tappet *d* of the jack-lever F. The body of the head is square or polygonal, (see Fig. 3,) and placed between two rings, *c' c'*, so that a wrench can be applied, and remains in position while used for securing the pilot in the key, and for adjusting it at the proper height. Instead of placing the square or polygon for the wrench at the top of the pilot, however, I can place the same near its foot, close over the screw-shank *e*. The body of my pilot is cross-shaped in its section, (see Fig. 4,) so as to combine strength and lightness. The pattern for my pilot is so made that it will readily draw from the sand in the casting, and that no further labor is required to finish my pilots for use except to cut a screw-thread on their lower ends and polish the upper end.

The jack G acts against a shoulder, *f*, on the butt *g* of the hammer H, and in this butt is secured an elastic cushion, *h*, close to the shoulder *f*. In the example shown in the drawing this cushion is made of a piece of felt; but it may be made in the form of a metallic spring or of any other suitable elastic material. When the key is depressed the hammer, after having struck the string, falls back to the position shown in Fig. 2, bringing the jack to bear upon the elastic cushion

h; and if a rapid repeating motion is imparted to the key, the jack is thrown from the elastic cushion to the shoulder *f*, and vice versa, in quick succession; and a very cheap, simple, and effective repeating action is produced.

With the soft-pedal rail K, I have combined a regulating-pad, *m*, which is provided with a soft cushion on one, and a regulating-screw on its opposite, side. In the example shown in the drawing the regulating-screw enters the rail K; but, if desired, said screw may be made to enter the hanger or support of the action. By means of this pad the position of the soft pedal in relation to the hammers can be regulated with great facility.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a key for piano-fortes, of two sections, B and C, the inner section being placed on the top of the outer section, substantially as and for the purpose herein shown and described.

2. A pilot, D, for a piano-forte action provided with a square or polygon to facilitate the operation of securing and adjusting the pilot in the key, substantially as set forth.

3. A pilot, D, for a piano-forte action cast with a body cross-shaped in its section, and with a square or polygon either above or below, substantially as and for the purpose shown and described.

4. The combination, with a regulating-pad provided with a soft cushion on one side and an adjusting-screw on the other, of the soft-pedal rail or tube or its support, for the purpose of regulating the position of the soft pedal toward the hammers, substantially as shown and described.

In testimony that I claim the foregoing I hereto set my hand and seal this 18th day of March, 1878.

C. F. THEODOR STEINWAY. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.