

H. KRANICH & J. BACH.
Piano Forte Action.

No. 233,103.

Patented Oct. 12, 1880.

FIG. 1.

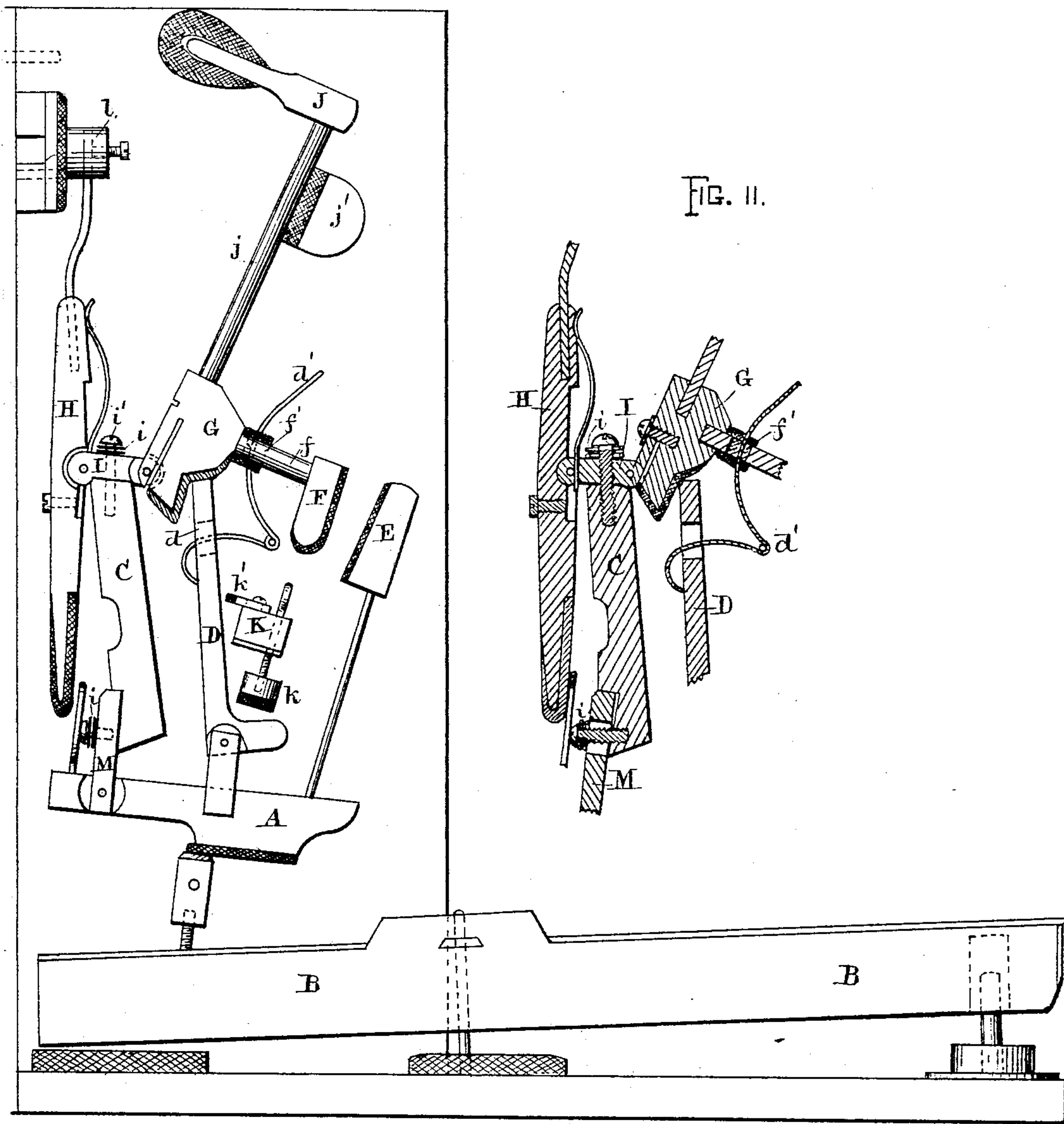


FIG. 11.

WITNESSES;

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UNITED STATES PATENT OFFICE.

HELLMUTH KRANICH AND JACQUES BACH, OF NEW YORK, N. Y.

PIANO-FORTE ACTION.

SPECIFICATION forming part of Letters Patent No. 233,103, dated October 12, 1880.

Application filed October 8, 1879.

To all whom it may concern:

Be it known that we, HELLMUTH KRANICH and JACQUES BACH, of the city of New York, county of New York, and State of New York, have invented a new and useful Improvement in Piano-Forte Actions for Upright Piano-Fortes, of which the following is a true and correct specification, and the accompanying are correct drawings thereof, in which latter—

Figure I is a side elevation. Fig. II is a detailed sectional view of the same.

The object of our invention is to produce a piano-forte action for upright piano-fortes wherein means are provided whereby the wooden butts by means of which the mechanism is attached to the rack may have space wherein to expand when affected by atmospheric influence, and reset after such expansion, so as to avoid the rattling caused by loose butts, and also to produce an action which will facilitate tremolo notes—that is, a rapid repetition without necessitating the action of the entire arm when performing on an instrument.

Referring to the drawings, B is an ordinary action-key having the proper means for raising the lifting-butt A. The butt A is provided with the jack D. This jack D, at its upper end, has a slot, *d*. At one side of the jack D is attached a spring, *d'*, which is bent over and passes through the slot *d*.

G is a hammer-butt, to which is attached, at the upper face, the hammer J by means of shank *j*, resting against rail *j'*. At the side of the butt G is attached, by means of a shank, *f*, the back jack-catch, F, which is properly weighted to assist in its falling. The shank *f* has a slot, *f'*, preferably cushioned, and is provided to guide the upper end of the spring *d'*.

I is a butt-arm, by means of which a part of the action mechanism is secured by a screw, *i'*, to the rack.

ii are springs, made preferably of flat spring-brass, which are placed between the heads of the screw and the pivoted arm M and butt-arm I.

H is a damper arm or lifter.

M is a pivoted arm, screwed to the rack and carrying part of the mechanism.

Heretofore the butts were screwed to the rack without any intervening medium to allow the expansion of the butt through atmospheric changes; consequently the butts through swelling forced the wood-screw *i'* from its seat and the action became loose and rattling. By the use of our improvement all this is obviated, and if the butts swell ever so much they will always be kept in place by the springs *i*.

The great feature of our invention is, however, the improved construction of the hammer-raising mechanism, by which improvement it is rendered only necessary to slightly tremble the finger and produce regularity in note.

K is a rail provided with stop *k* and adjustable rest *k'*. *l* is a damper. The spring *d'* is so affixed that great play is given to the curved portion between the coiled part and the point of its fastening, the upper portion of the spring *d'* being passed through the slot *f'*. The upper portion of the spring is bent in the shape of an elbow, the angle resting against the end of the slot *f'* nearest the hammer-butt. When the key is raised the action of the spring *d'* prevents the jack D from slipping away altogether from the shoulder of the hammer-butt, thus insuring the catching of the hammer-butt by a very slight motion.

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

1. In a piano-forte action, the combination of the jacket D, having a slot, *d*, the hammer-butt G and its shank *f*, having a slot, *f'*, and the spring *d'*, engaging the respective slots, constructed and arranged to operate substantially as and for the purpose specified.

2. In a piano-forte action, the combination of the jack D, provided with a slot, *d*, the hammer-butt G, provided with a slot, *f'*, the spring *d*, engaging the respective slots, the back jack-catch, F, and the rail K, provided with a rest, *k'*, and the adjustable stop *k*, the whole arranged to operate substantially as specified.

3. In a piano-forte action, the combination of the hammer-butt G, butt-arm I, and damper-arm H, secured to the rail C by means of a screw and an intermediate spiral spring, i, substantially as and for the purposes specified.

5 4. In a piano-forte action, the combination, with the lifting-butt A, of the pivoted arm M, secured to the rail C by means of a screw and

intermediate spiral spring, i, substantially as and for the purpose set forth.

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Witnesses:

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