

UNITED STATES PATENT OFFICE.

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PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 548,813, dated October 29, 1895.

Application filed June 25, 1895. Serial No. 554,004. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. NOLL, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Piano-Actions, of which the following is a specification.

This invention relates to an improved action for grand pianos, by which a quick repetition is imparted to the hammer and the construction considerably simplified by the introduction of a pivoted jack-rest on the repetition-lever and a single regulating-spring for the jack and jack-rest.

The invention consists of a grand-piano action, which comprises a fulcrum repetition-lever, a jack-rest pivoted to said repetition-lever, a regulating-screw for said jack-rest, a jack acting on said repetition-lever, a regulating-screw on said jack, and a single regulating-spring applied to a fixed post and acting by one arm on the jack-rest and by the other on the jack.

The invention consists, further, of the special construction of the jack-rest, which is provided with a stirrup in its recessed front end, to which the upper arm of the regulating-spring is applied, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved grand-piano action, partly in section, through the supporting-rails of the action. Fig. 2 is a perspective view of my improved jack-rest, and Figs. 3 and 4 are respectively a bottom view and an end view of the jack-rest.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A designates the hammer, and A' the hammer-shank, which latter is connected in the usual manner by a flange *a* to the hammer-rail B.

B' is the hammer-rest, and B² the rest-support, which latter is supported to a flange *b*² on the action-rail B³. The hammer-rail B and the action-rail B³ are supported by the usual action-brackets, which are not shown in the drawings.

C represents the repetition-lever, which is fulcrumed to a post C', that rises from the

rest-support B², said support being actuated by an adjustable knob or button on the key-lever L, as usual in grand actions.

E represents the jack, which is pivoted at *e* to the recessed front end of the rest-support B². The upper end of the jack E projects through a slot in the repetition-lever C and bears against a knuckle *a'* on the shank of the hammer A.

The jack E is provided at its lower end with the usual arm E', which is brought in contact with an adjustable rest *e'* when the rest-support B² is lifted by the key-lever L.

The jack E is provided with a regulating-screw D, which, instead of being engaged as heretofore by the well-known metal spoon, bears against a wooden jack-rest F, which is forked at its rear end and pivoted to the repetition-lever C. The front portion or face of the jack-rest F is formed on a circular arc and provided with a central recess *f*, in which is arranged a transverse stirrup *f'*, to which the upper arm *g* of a V-shaped regulating-spring G is applied. The lower arm of the V-shaped regulating-spring is connected with a stirrup *f*² on the jack E, the apex of said spring being loosely supported on a pin of the post C', as shown in Fig. 1. The transverse stirrup *f'* is attached to holes in the side walls of the jack-rest F, said side walls being further provided with openings *f*³, so that the proper connection of the upper arm *g* of the regulating-spring G with the stirrup *f'* of the jack-rest F can be readily seen and controlled. The relative position of the jack-rest F toward the jack and the repetition-lever C is regulated by means of a screw *f*⁴, which passes through the repetition-lever, and by which the tension of the upper arm *g* of the regulating-spring G is regulated.

By regulating the jack-rest F by the screw *f*⁴ the spring-arm *g* can be set to various degrees of tension while affecting but slightly the tension of the lower arm *g'*, which acts on the jack E. The tension of the lower spring-arm *g'*, however, can be varied by attaching its stirrup *f*² to a point higher or lower on the jack E, it being attached at a greater distance from the pivot *e* of the jack for the treble-action, while for the bass-action the stirrup is located nearer to the pivot *e* of the jack, as

shown, respectively, in dotted and full lines in Fig. 1.

The front end or face of the jack-rest is made in the shape of an arc of a circle of which its pivot is the center, as shown in dotted lines in Fig. 1. This has the advantage that the spring-arm *g* of the regulating-spring *G* can be regulated without changing the position of the jack *E*, the screw of which always bears on the arc-shaped face of the jack-rest whatever be the position to which the same is adjusted for regulating the tension of the upper arm *g* of the spring *G*. The construction described permits of the use of one regulating-spring for both the jack and the repetition-lever in place of two independent springs, which were used heretofore and connected separately with the jack and repetition-lever, respectively.

By the introduction of a jack-rest pivoted to the repetition-lever the construction of the grand action is greatly simplified and a very effective and reliable repetition of the hammer obtained for the simple reason that the spring-arm connected to the jack-rest can be set to tension without affecting to any appreciable extent the spring-arm connected with the jack, while the change of position of the jack-rest, owing to the concentric face of the same, does not change in the least the relative position of the jack toward the jack-rest and repetition-lever.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, in a piano-action, with a fulcrumed repetition-lever and a jack, of a jack-rest pivoted to the repetition-lever, and a single V-shaped regulating-spring, one arm of which is connected to the jack-rest, while the other is connected to the jack, substantially as set forth.

2. The combination, in a piano-action, with

a fulcrumed repetition-lever and a jack, of a jack-rest pivoted at its rear-end to the repetition-lever and provided in its recessed front-end with a stirrup, and a single regulating-spring attached to a post of the rest-support and connected by one arm with a stirrup of the jack-rest and by its other arm with a stirrup on the jack, substantially as set forth.

3. The combination, in a piano-action, with a fulcrumed repetition-lever and a jack, of a jack-rest pivoted at its rear-end to the repetition-lever, and formed on a circular arc at the front-end or face concentric to its pivot, a regulating-screw for said jack-rest, and a single regulating-spring attached to the support of the repetition-lever, of which one arm is connected with the jack-rest and the other with the jack, substantially as set forth.

4. The combination, in a piano-action, with the repetition-lever, jack and rest-support, of a jack-rest pivoted at its rear-end to the repetition-lever and provided with a recessed front-end or face formed on a circular arc, a stirrup in its recessed part and openings in the side-walls of said recessed part, and a single regulating-spring applied to a post on the rest-support, the upper arm of said spring being connected with the stirrup of the jack-rest and the lower arm with a stirrup on the jack, substantially as set forth.

5. In a piano-action, a jack-rest, formed of a recessed rear-end, a recessed front-portion having a face formed on a circular arc and a transverse stirrup on the recessed front-portion, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN L. NOLL.

Witnesses:

PAUL GOEPEL,
GEORGE W. JAEKEL.