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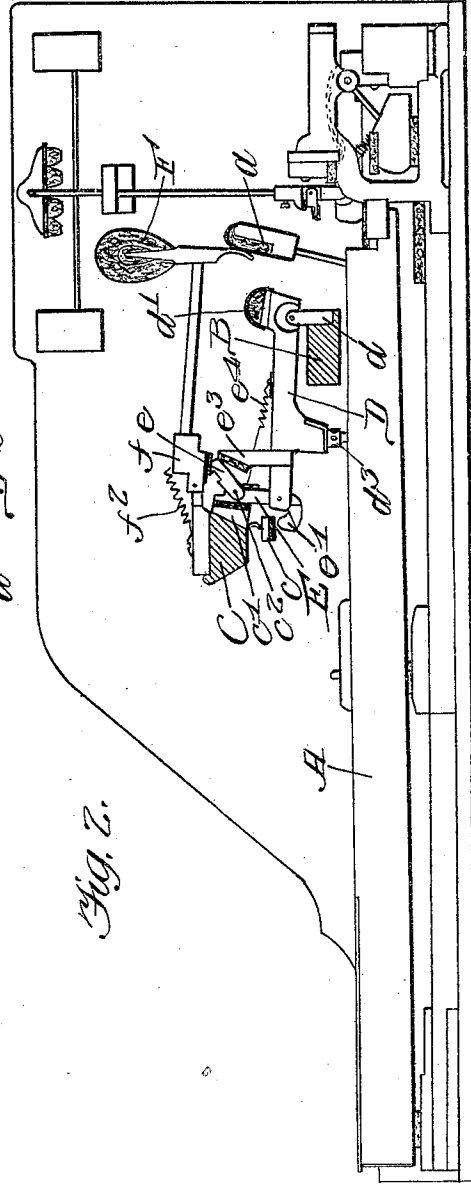


Fig. 2.

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UNITED STATES PATENT OFFICE.

FRANZ MEYER, OF OAK PARK, ILLINOIS.

PIANO-ACTION.

940,264.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed April 12, 1906. Serial No. 311,226.

To all whom it may concern:

Be it known that I, FRANZ MEYER, a citizen of the United States of America, and resident of Oak Park, Cook county, Illinois, have invented a certain new and useful Improvement in Piano-Actions, of which the following is a specification.

My invention relates to piano actions in general, and more especially to the actions employed in grand pianos.

Generally stated, the object of my invention is the provision of an improved, simplified and highly efficient piano action.

Special objects of my invention are the provision of means for avoiding the use of certain elements heretofore considered necessary in grand piano actions; the provision of an improved jack arrangement for grand piano actions; the provision of improved means for avoiding the necessity of loading the piano keys; and the provision of certain details and features of improvement and combinations tending to increase the general efficiency and serviceability of piano actions of this particular character.

To the foregoing and other useful ends, my invention consists in the matters hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 shows a grand piano action embodying the principles of my invention. Fig. 2 shows the same action in another position.

As thus illustrated, my improved piano action comprises the usual piano keys A, each key being provided at its rear end with the usual back check *a*. The rail B extends horizontally in the usual manner, as also the butt rail C. The grand supports D are pivotally secured to the flange *d* mounted upon the rail B, each grand support being provided with a hammer rest *d*¹. Each grand support is connected with its allotted key by a suitable adjustable connection *d*². At its forward end each grand support is provided with a pivoted jack E, which jack is composed of upper and lower portions *e* and *e*¹, the two sections being pivotally connected together at *e*². The jack support *e*³ is rigidly secured to the grand support and a spring *e*⁴ extends through the jack support and connects the grand support with the joint or point of articulation between the upper and lower portions of the jack. In this way, the said jack is normally distended or in a straightened-out condition, and rests against the jack support.

The hammers F are secured to the butts *f*, and each butt is pivotally secured to the flange *f*¹ mounted upon the butt rail C. Each hammer is provided with a spring *f*², which connects its rear end with the flange *f*¹, and which yieldingly opposes the drop or downward movements of the hammers. These springs, and also the springs *e*⁴, can be properly tensioned to produce the desired results. With this arrangement, it is not necessary to weight the keys. A stop *c* is secured to the under side of the rail C, and is adapted to engage the lower upturned end portion of the lower section *e*¹ of the jack. A stop or buffer piece *c*¹ is secured to the inner face of the rail C and adapted to be engaged by the lower section of the jack, as shown more clearly in Fig. 2. Normally, the parts are in the positions shown in Fig. 1. However, when the key is depressed, and retained in such depressed condition, the parts are then in the positions shown in Fig. 2. It will be seen that the depression of the key causes the lower end of the jack section *e*¹ to engage the stop *c*, which has a round head thereby causing a buckling or movement of the joint between the upper and lower sections of the jack, which results in allowing the hammer to settle back and assume the position shown in Fig. 2. The stroke, however, is sufficient to enable the jack, while in its straight or distended position, to push the hammer up into engagement with the string. This description, it will be understood, applies to each key and its hammer and jack, etc. With this arrangement, the hammers are very responsive, it only requiring a slight elevation of the key from a depressed position to enable the hammer of such key to immediately strike another blow; thus, rapid repetition is possible with each key, with the desired effect of the hammers on the strings. When a key is released, the spring *e*⁴ proceeds to pull the jack into its normal or straightened-out position, as shown in Fig. 1.

It will be observed that the upper end of each jack is rounded to engage the felt or other suitable material secured to the under side of the butt connected with its allotted hammer.

With this construction, the actions are simple in arrangement, being composed of comparatively a few number of parts, and certain expensive and more or less compli-

cated features are dispensed with, which features have heretofore been considered necessary in grand piano actions.

Other advantages and valuable features will be apparent to those skilled in the art.

What I claim as my invention is,—

1. In a grand piano action, the combination of a key, a hammer, a grand support, an articulated jack extending between the support and hammer butt, and means on the grand support for retaining the jack normally in an upright position, said means comprising a part constantly engaging the upper section of the jack.

2. In a grand piano action, the combination of a key, a hammer, a pivoted grand support, a jack having its lower end pivoted on said support, said jack consisting of upper and lower pivotally connected sections, a spring tending to keep the jack normally straightened-out or distended, the upper end of the jack engaging the butt of the hammer, means for engaging the lower end of the jack to cause the same to buckle or bend at the joint thereof, and means on the grand support for retaining the jack normally in an upright position, said means comprising a part constantly engaging the upper section of the jack.

3. In a grand piano action, the combination of the piano key A, the hammer F, the grand support D, the hammer rest d^1 , the jack support e^3 mounted on the grand support, the jointed or articulated jack E mounted on said grand support always engaging the upper end of the support e^3 , the spring e^4 for holding the jack in a normally straightened-out or distended position, and the sta-

tionary stop c for engaging the lower end of said jack to cause the latter to buckle or bend at the joint thereof, said jack support e^3 supporting the jack E normally in an upright position, substantially as, and for the purpose set forth.

4. In a grand piano action, the combination of a piano key, a hammer, an articulated or jointed jack constituting a medium of connection between the key and the hammer, means for normally retaining the jack in an upright position, means for engaging the lower end of the jack to cause the same to buckle or bend at the joint thereof, said first-mentioned means comprising a support constantly engaging the upper section of said jack.

5. In a grand piano action, the combination of a piano key, a hammer, a pivoted grand support, a jointed or articulated jack having its lower end pivoted on the forward end of said grand support, a jack support rigidly secured to said grand support, a spring for constantly holding the upper section of said jack against said jack support, tending to keep the jack normally straightened out or distended, and means for engaging the lower end of the jack to cause the same to buckle or bend at the joint thereof, the upper end of the jack engaging the butt of said hammer.

Signed by me at Chicago, Cook county, Illinois, this tenth day of April, 1906.

FRANZ MEYER.

Witnesses:

A. F. DURAND,
ALBERT J. SAUSER.