

Patented July 23, 1861.



UNITED STATES PATENT OFFICE.

FREDK. FRICKINGER, OF SCHODACK, NEW YORK.

PIANOFORTE-ACTION.

Specification of Letters Patent No. 32,863, dated July 23, 1861.

To all whom it may concern:

Be it known that I, FREDERICK FRICKINGER, of Schodack, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Pianoforte-Actions; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a pianoforte action with my improvements, representing it at rest. Fig. 2 is a similar view representing in black outline the key depressed, the hammer in the act of striking the string, and the jack as about to escape, and representing in red outline the jack escaped, and the hammer as having fallen to a condition of readiness for repeating. Fig. 3 is a side view of the jack and jack-bottom, representing the latter partly in section.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists firstly in a novel contrivance for arresting the hammer near the string after the blow to enable a quick repetition to be effected.

It also consists in a spring applied in connection with the hammer for the purpose of relieving the jack and key of such portion of its weight as may be desirable. And it further consists in an improved mode of applying the jack-spring.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A is the hammer, which, with its butt *a*, is constructed and arranged as in the action known in this country as the French action, with the addition of a notched block *b*, secured to the shank *c*, near the butt, the said block extending some distance below the shank and its notch *e*, facing, but situated a short distance below the notch in the butt. The notch *e*, is faced or lined with leather or other soft material.

B is the key; C, the jack-bottom, and D, the jack; the latter being constructed like the jack of the so-called French action with the addition of a small rounded protuberance *d*, on the back near the tip and a small protuberance *f*, on the front part of the bottom of its tenon *g*; the protuberance *d*, being for the purpose of entering the notch *e*, and the protuberance *f*, being for the at-

tachment of the jack-spring *h*. The jack-spring is of spiral construction and arranged within the mortise *i*, of the jack bottom; and its front end is attached to the protuberance *f*, and its rear end to the jack bottom.

E is the spring applied to the hammer to relieve the jack and key of a portion of its weight. This spring consists of a piece of steel wire coiled at *j*, and secured at the end near the said coil, to the hammer flanch *F*, and having a hook at the opposite end which is attached by a cord *k*, or its equivalent to the hammer-butt just above the notch in the latter.

H is the back-check. This however may be dispensed with, for the reason that will be presently explained. *l*, is the string.

I, is the regulating screw applied in the manner common to the so called French action.

The operation of the action is as follows: When the front end of the key is depressed from the position of rest represented in Fig. 1, the jack acts upon the hammer-butt in the usual manner, throwing the hammer up against the string as shown in black outline in Fig. 2, and the heel *m*, of the jack coming in contact with the regulating screw, causes the jack to escape from the notch in the hammer-butt, and allows the hammer to drop from the string, but as the tip of the jack escapes from the hammer-butt, its protuberance *d*, enters the notch *e*, in the block *b*, and so arrests the hammer near the string, as shown by the red outline in Fig. 2, the upper side of the notch *e*, then resting upon the protuberance *b*, and permitting the rapid repetition of the blow to be effected after a slighter rise of the front end of the key than is sufficient to permit the tip of the jack to enter the notch of the hammer-butt, as the hammer may then be made to strike the string by the action of the protuberance *d*, against the upper side of the notch *e*, the lower side of which performs the duty of the back check by coming in contact with the bottom of the protuberance *d*, in case of any tendency of the hammer to fly upward before the front end of the key is allowed to rise, and then depressed again. The hammer is always in condition to repeat whatever may be the position of the key. The spring E, by being bent more or less upward or downward can be made to take just so much of the weight of the hammer as is de-

sired and so relieve the jack and key in a desirable degree to make the action play easily. The spring *h*, by being arranged as described, and connected directly with the
5 protuberance *f*, on the tenon of the jack possesses all the advantages to be derived from a direct pull of the spring while it is well protected and has a more durable connection than when connected by a string
10 passing around the bottom of the tenon.

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

1. The combination of the protuberance *d*, on the jack, and the notched block *b*, at-

tached to the hammer-shank, substantially as 15 and for the purpose herein specified.

2. The spring *E*, applied in connection with the hammer-butt, substantially as and for the purpose herein set forth.

3. The connection of the jack-spring *h*, 20 with a protuberance *f*, on the bottom of the tenon of the jack, substantially as and for the purpose herein described.

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Witnesses:

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