



# UNITED STATES PATENT OFFICE.

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## PIANOFORTE-ACTION.

Specification of Letters Patent No. 8,350, dated September 9, 1851.

*To all whom it may concern:*

Be it known that I, RANDOLPH KRETER, of the city, county, and State of New York, have invented a certain new and useful Improvement in the Piano-Actions, and that the following is a full, clear, and exact description of the principle or character, which distinguishes my invention from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the action with the key up; Fig. 2, a like elevation with the key down after the string has been struck; and Fig. 3, a like elevation with the hammer held up by the repeating check preparatory to the repetition of the touch.

The same letters indicate like parts in all the figures.

The object of my invention is to obtain a repeating action of the hammer without the necessity of allowing the key to rise to its full height under the finger as in Erhard's action but by a much more simple and efficient action, and to this end my invention consists in the employment of what I denominate a repeating check or tongue connected with a lever hinged to the hammer rail and resting on the key the under side of the hammer butt being provided with an arm (which I denominate the heel of the hammer butt) which rests against the upper end of the face of the operating check, so that after the hammer has struck the string instead of coming down onto the ordinary check the heel of the butt rests against the repeating check and it is there held in position ready to be acted upon by the lever fly with the slightest upward movement of the key.

In the accompanying drawings (*a*) represents the usual piano key, to which is attached the usual check (*b*). A standard (*c*) which takes the place of the regulating rail, and the lever bottom (*d*) one part of which (*e*) is separated by a longitudinal slot to admit a regulating wedge (*f*) under it which wedge is operated by a screw (*g*) tapped into the standard so that by the turning of this screw the part (*e*) of the lever bottom to which the lever fly (*h*) is hinged can be elevated or depressed to regulate the position of the lever fly relatively to the butt (*i*) of the hammer (*j*).

The lever fly is drawn back by a helical spring (*k*) against a cushion on the end of a regulating screw (*l*) tapped in the upper end of the standard by means of which the position of the fly is regulated to strike the butt properly.

The journals of the arbor of the hammer turn in proper recesses made in a cap-plate (*m*) secured to the top of the hammer rail (*n*) and this cap plate is slit for some distance from the back end to permit the upper part to spring and over it is placed a metal plate (*o*) one end of which is secured with the cap to the hammer rail by screws (*p*). This metal plate is notched across to admit of bending; a screw (*q*) with a head at the lower end passes through the cap (*m*) and is tapped into the rear end of the metal plate (*o*) so that by turning this screw the two parts of the cap-plate (*m*) can be drawn together or separated to close or open the recesses that form the boxes for the journals of the hammer. So far I have described an action which does not essentially differ from the action in general use and to this is added my improvement.

To the under part of the hammer butt and back of the face on which the fly acts to throw up the hammer there is an arm (*r*) (which I denominate the heel of the butt) the front face of which is cushioned, and rests against the face of what I denominate the repeating check (*s*) faced with leather at (*t*), to receive the cushion of the butt heel, and its lower end is attached to one arm of a lever (*u*) hinged to the hammer rail (*v*) the other arm of which has a regulating screw (*w*) with a block and felt cushion (*x*) at its lower end which rests on the lever, so that when the key is depressed the upper end of the repeating check is moved forward, so that after the hammer has struck the string and is liberated by the fly, the heel of the butt shall be caught by the repeating check and then held, that the fly by a very slight upward movement of the key can again act on the butt of the hammer to repeat the action. The repeating check which is made of wood and sufficiently thin to spring is prevented from moving too far forward by coming against the shoulder (*y*) of a regulating screw (*z*) which passes through the hammer rail, so that by means of this screw and the one (*w*) before described, the position of the

repeating check can be regulated with the greatest accuracy relatively to the heel of the hammer butt. By this arrangement it will be seen that the touch can be repeated  
5 any number of times with a very slight movement of the key instead of requiring the key to rise to its full height at each touch, as in the ordinary action. This improvement will be found highly important  
10 in executing rapid passages which require the same note to be repeated. It presents other important advantages which do not however require to be enumerated.

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

The repeating check or tongue connected 15  
with a lever hinged to the hammer rail and resting on the key, the under side of the hammer butt being provided with an arm which rests against the upper end of the 20  
face of the repeating check substantially as and for the purpose specified.

RANDOLPH KRETER.

Witnesses:

A. P. BROWNE,  
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