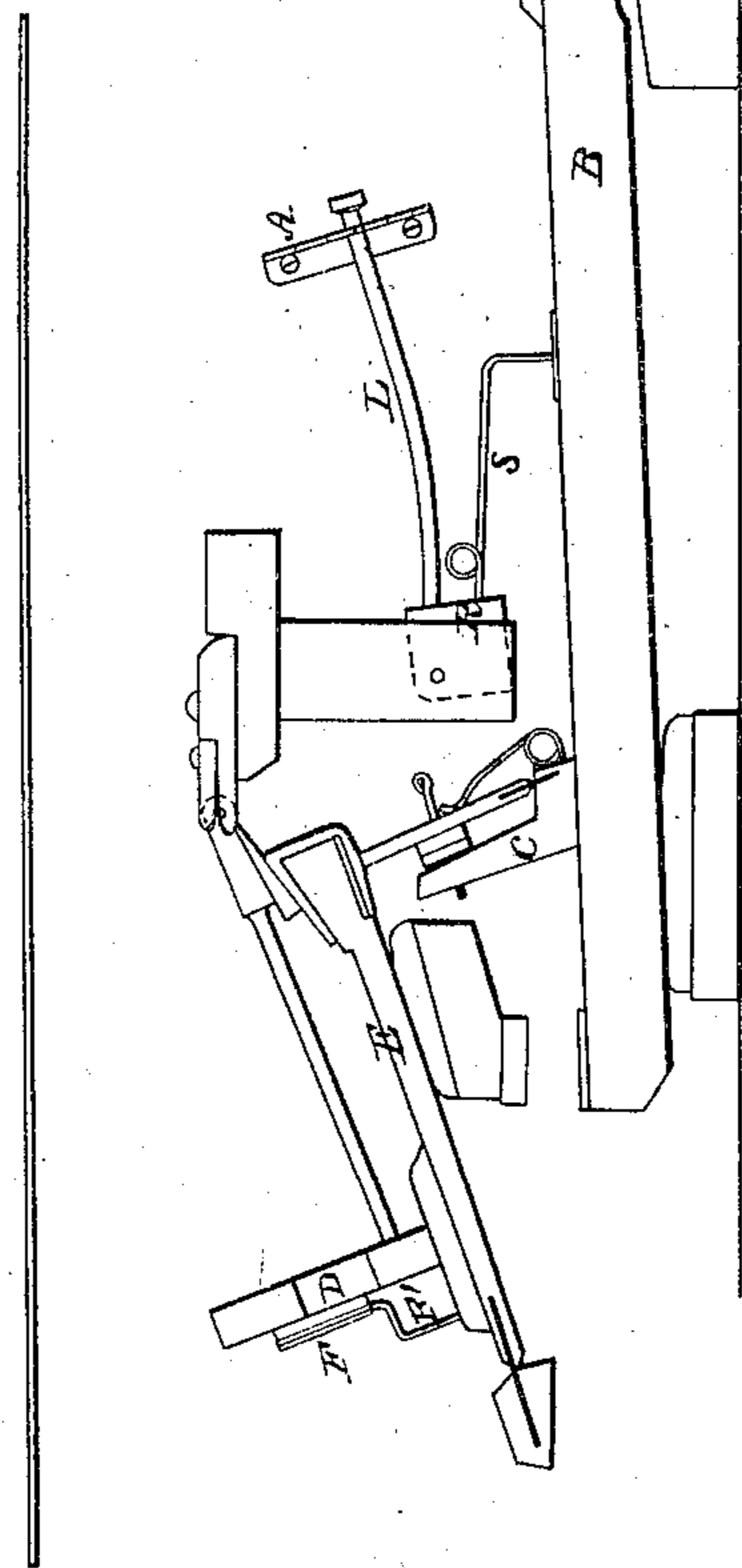


*J. J. Wise,  
Piano Action,*

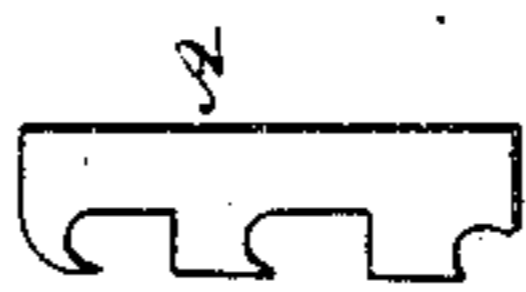
*Nº 5,990.*

*Patented Dec. 26, 1848.*

*Fig. 1.*



*Fig. 2.*



# UNITED STATES PATENT OFFICE.

JNO. J. WISE, OF BALTIMORE, MARYLAND.

## PIANOFORTE-ACTION.

Specification of Letters Patent No. 5,990, dated December 26, 1848.

*To all whom it may concern:*

Be it known that I, JOHN J. WISE, of the city and county of Baltimore, and State of Maryland, have invented a new and useful  
5 Improvement in the Action of the Pianoforte called Wise's Elastic Universal Touch, which is described as follows, reference being had to the annexed drawings of the same making part of this specification.

10 Figure 1 represents a side elevation of a single key-lever, secondary lever, check, hammer, jack and graduating spring &c. Fig. 2, is a side view of the rack for holding the adjustive lever of the spring bar in  
15 any required position.

In all pianofortes heretofore constructed, that part of the action called the "key-lever" is constructed and arranged so that when pressed down by the performer it re-  
20 acts, or rises up, wholly, or partially, by the preponderance of gravity on the opposite arm of the key-lever, the usual mode of arranging and constructing of which is to fix the center of motion a little distant from the  
25 center of gravity so that the opposite and interior arm of the key-lever, together with its auxiliary lever may preponderate with a reacting force, or touch, not too great for the physical capacity of most performers, nor  
30 too light for the proper performance of most music. The defects of the above named construction of the common pianoforte key levers is founded in the application of gravity as a reacting agent. It is well  
35 known that the action of gravity in the first moment is slow and feeble. That the key-levers, when quiescent, present the greatest resistance to the least action of the performer; hence the agency of gravity is in-  
40 competent to the best disposing action of the performer; that is to say the keys when down rise slow and feeble and when up are harder to press down.

Another defect in the use of gravity as a  
45 reacting agent is, that different degrees of touch cannot conveniently be impressed on the same key-lever so as to suit the physical capacity and skill of different performers, nor to suit at different times the same per-  
50 former by which it is plain the common piano has but one touch or reacting force.

The above named defects in the movement and common construction of pianoforte key-levers is avoided in my improvement. The  
55 following is a description of my improved mode of construction.

In my improvement the center of motion of the key levers is in the center of gravity, so that the key-levers, together with the auxiliary levers and appurtenances may be  
60 free of all influence of gravity; that the keys may react when acted upon by the performer. I employ springs S fixed in a movable rail or bar R, having its centers of motion in the right and left hand checks of the  
65 key frame, and adjusted so that the springs may press with the least force on the interior arms of the key-levers. To retain the bar R and impress the springs S to any required  
70 degree of force I apply one or more levers L screwed into said adjustable spring bar R or otherwise secured at suitable distances  
75 apart—the ends of said levers standing out so as to work in and along a sort of rack A for holding it at any required position.

It is plain that by raising and depressing the spring bar lever L the greatest, and least, and all intermediate forces of the springs may be impressed on the key-lever B; by  
80 which it may be seen that the improvement is capable of producing different degrees of touch or reacting force to the piano.

The advantages sought and obtained by my improvement are that the touch or force of the key-levers B may be conveniently  
85 adapted to the physical capacity of different performers and varied to suit the same performer at different times; and that the least action of the performer may be opposed by the least reaction of the key levers and the  
90 greatest action by the greatest reaction of the key levers,—by simply raising or lowering the lever L in the arc of a circle.

Another advantage is the levers being affected by the changes of weather, a com-  
95 pensating force of the springs may be impressed on the levers so as to react more freely for the time and while under the influence of unpropitious weather.

A further advantage is that by the alter-  
100 nate use of the light and heavy touch, the time of practice may be prolonged without fatigue and the physical force much improved in young performers.

Another improvement that I have made  
105 in the piano consists in attaching the check F to the under hammer, E, which is extended in its length to receive it, instead of attaching it to the end of the key; (or to an additional lever,) as is usual, by which the  
110 instrument is simplified and cheapened in its construction, and the inconvenience of at-

taching it to the key and the employment of an additional lever is removed and the reaction of the hammer on the key is thus avoided which has heretofore been found  
 5 very objectionable on account of the disagreeable effect, such reaction produces to the touch of the performer.

A is the rack or notched plate for holding the lever L in any required position.

10 B is the key, or lever, made and arranged in the usual manner.

C is the jack.

D is the hammer.

E is the under hammer, which is extended  
 15 beyond the upper hammer D, to receive the check F, whose stem F' is bent and inserted into the under hammer E in such position as to bring the check in contact with the hammer when in a quiescent state, as represented  
 20 in Fig. 1.

The rest of the piano is made in the usual manner.

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

25 1. The application of springs, attached to a movable bar, or rail, to the key levers of the "piano forte," so as to impress different

degrees of force in the manner and for the purpose described.

2. I also claim the combination and arrangement of the turning rail R, lever L, and notched plate A, for the purpose of graduating the force of the springs on the key levers in order to adjust the keys for various degrees of touch, and to the physical capacity  
 35 of the performer, and to the character of the music to be played, as herein fully set forth.

3. I likewise claim as my invention attaching the "check" F to the "under hammer" E (instead of the end of the key lever; or to an additional lever) by extending the  
 40 "under hammer" E beyond the "main hammer," D, so as to receive the "check-piece" F, which I attach to it in any convenient way; by which arrangement the reaction of  
 45 the main hammer upon the key-lever is prevented, as above set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses this eleventh day of March 1848.

J. J. WISE.

Witnesses:

WM. P. ELLIOT,

LUND WASHINGTON, Sr.