



# United States Patent Office.

FREDERICK MATHUSHEK, OF NEW YORK, N. Y.

Letters Patent No. 113,074, dated March 28, 1871.

## IMPROVEMENT IN PIANO-FORTE ACTIONS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, FREDERICK MATHUSHEK, of New York, in the county of New York and State of New York, have invented a new and valuable Improvement in "Piano-Fortes;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a sectional view of my invention.

Figure 2 is a view of the key-lever, removed.

My invention has relation to an improvement in piano-fortes; and

It consists in giving to that end of the key-lever to which the jack is attached an inclination with reference to the plane of the finger-board, whereby the action is adapted to the strings when their plane is inclined to the perpendicular.

In the drawing—

The letter A designates that portion of the frame to which the keys are attached;

B represents the fulcrum; and

C, the cushion-block, at the forward end of the key-frame A.

The rear end of this frame is made sloping or inclined, as shown at D, to correspond with the inclination of the end of the key-lever.

E represents the key-lever, extending rearward from the finger-end in a straight line to a short distance

beyond the fulcrum B, and then turning downward in an inclined direction to its rear end.

Sometimes the key-lever may be inclined upward from the point *a*, but the downward inclination is preferred.

F represents a cushion, placed at the foot of the slope D, to receive the concussion of the rear end of the key-lever when the finger-end is relieved from pressure.

G represents the jack, attached to the inclined portion of the key-lever;

H represents the hammer-cushion; and

K, the friction-pad, also attached to the inclined portion of the key-lever, near the head of the slope D.

L represents the hammer, and

N the damper-lever.

The latter is operated by the toe of the key-lever through the medium of the slide-rod R.

The bent key-lever and the consequent arrangement of the attendant devices which constitute the action are especially adapted to serve an important purpose in upright pianos having the inclined scale.

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

The bent key-lever E, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

Witnesses:

FR. MATHUSHEK.

FRANK B. CURTIS,

JOHN M. HYNE.