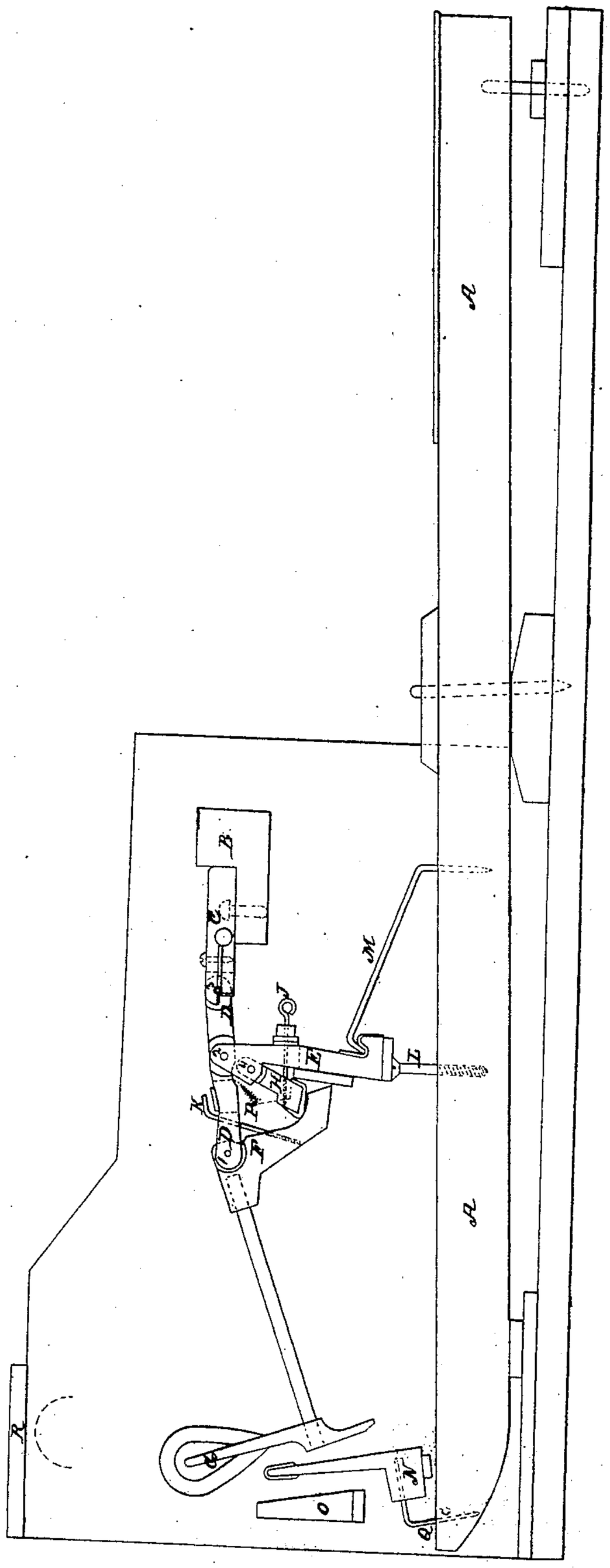
No. 28,374. PATENTED MAY 22, 1860.

G. H. HULSKAMP.
PIANOFORTE ACTION.



Witnesses.
Philip H. Baumann
A. R. Lee

Inventor.
G. Henry Hulskamp

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

G. HENRY HULSKAMP, OF TROY, NEW YORK.

PIANOFORTE-ACTION.

Specification of Letters Patent No. 28,374, dated May 22, 1860.

To all whom it may concern:

Be it known that I, G. HENRY HULSKAMP, of the city of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Pianoforte-Actions; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawing and to the letters of reference marked thereon.

The improvement relates to the action in piano fortes. It is represented by the figure, which is a vertical section through the middle of one key A, A. It represents the several parts in their full size and proper proportions. The red shaded parts are those covered with cloth, felt or buckskin to prevent noise, the blue shaded parts are screws, metallic wires etc.

A bar B, extending lengthwise across the piano forte is firmly attached to the frame in the usual manner. To this bar is secured the hinge butt C, and to the latter is attached the hammer lever D, D, by the joint 3. The joints 1 and 2 connect the hammer lifter E, the hammer butt F and the hammer G with the hammer lever D, D.

The jack H is attached to the hammer-lifter E by the joint 4 which allows to it a free motion. To the jack is attached by a screw the stop J. This passes freely through a hole in the hammer lifter so that the jack has a free motion toward J. But its motion in the opposite direction is arrested by the wooden nut faced with cloth on J when it has reached the position shown in the drawing. The stem of J is a screw and the nut screws upon it by which its position on the stem can be readily adjusted. A screw on the end of the stop K, by which it is attached to F, serves to adjust its length also.

The screw L inserted in the key serves to adjust accurately the height of the hammer. The spring M inserted in the key holds the hammer lifter in its proper place and presses the same upon the screw L. The back check N with an elastic spring Q in the key prevents the rebound of the hammer. The bar O extending lengthwise above the keys serves to regulate the back check. A spiral spring P connected with the hammer lever and the jack draws the stop tightly against the hammer lifter.

R represents the strings.

The operation is as follows: When the back part of the key is raised by pressing down the front of it, the hammer will be carried rigidly upward to the hammer lifter and lever until it has been brought to within about $\frac{1}{8}$ of an inch from the strings. The jack will then escape and after the blow has been given the hammer will descend about $\frac{3}{8}$ of an inch and will become connected with the head of the back check, which is pressed by its stop or bar O toward the hammer to prevent the rebound of the hammer. As the key descends the jack will connect again with the hammer butt, so that the blow may be repeated with a small part only of the motion of the key. From the inclined surface of the hammer butt sliding over the end of the jack, the hammer is raised about $\frac{3}{8}$ of an inch more than would be due to raising the key only and thus gives great elasticity to its action, and the stop K of the hammer butt will connect with the hammer lever when the hammer strikes the string. The hinge butt is secured to its bar with a screw, whose head passes through a large hole till within about $\frac{1}{16}$ of an inch of its lower surface for the purpose, that the hinge butt will not become loose by the effect of heat, which is often the case, when the butt or other parts in the action are $\frac{1}{4}$ or $\frac{3}{8}$ inch thick. To regulate the height of the hammer or action a screw is inserted in the key, and thus cannot be made loose by changes of temperature, which is a great defect in most of the actions at present in use. It will also be seen that the joints in this combination are farther distant from each other than in other actions, which adds to its lightness, power and durability.

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

1. The arrangement and construction of the action for piano fortes substantially as above set forth.

2. The regulating screw L, secured to the key and also the spring M, to hold the hammer lifter in its proper place substantially as set forth or its equivalent.

3. The improved back check with spring fastened to the key for the purpose set forth, substantially as described.

4. The lever D, D, jointed and connected with the hinge butt and hammer butt to lift the hammer or its equivalent.

5. Securing the hinge butt to its bar in the manner and for the purpose set forth or its equivalent and the same device in other parts in the action.

G. HENRY HULSKAMP.

Witnesses:

PHILIP H. BAERMANN,

A. A. LEE.