

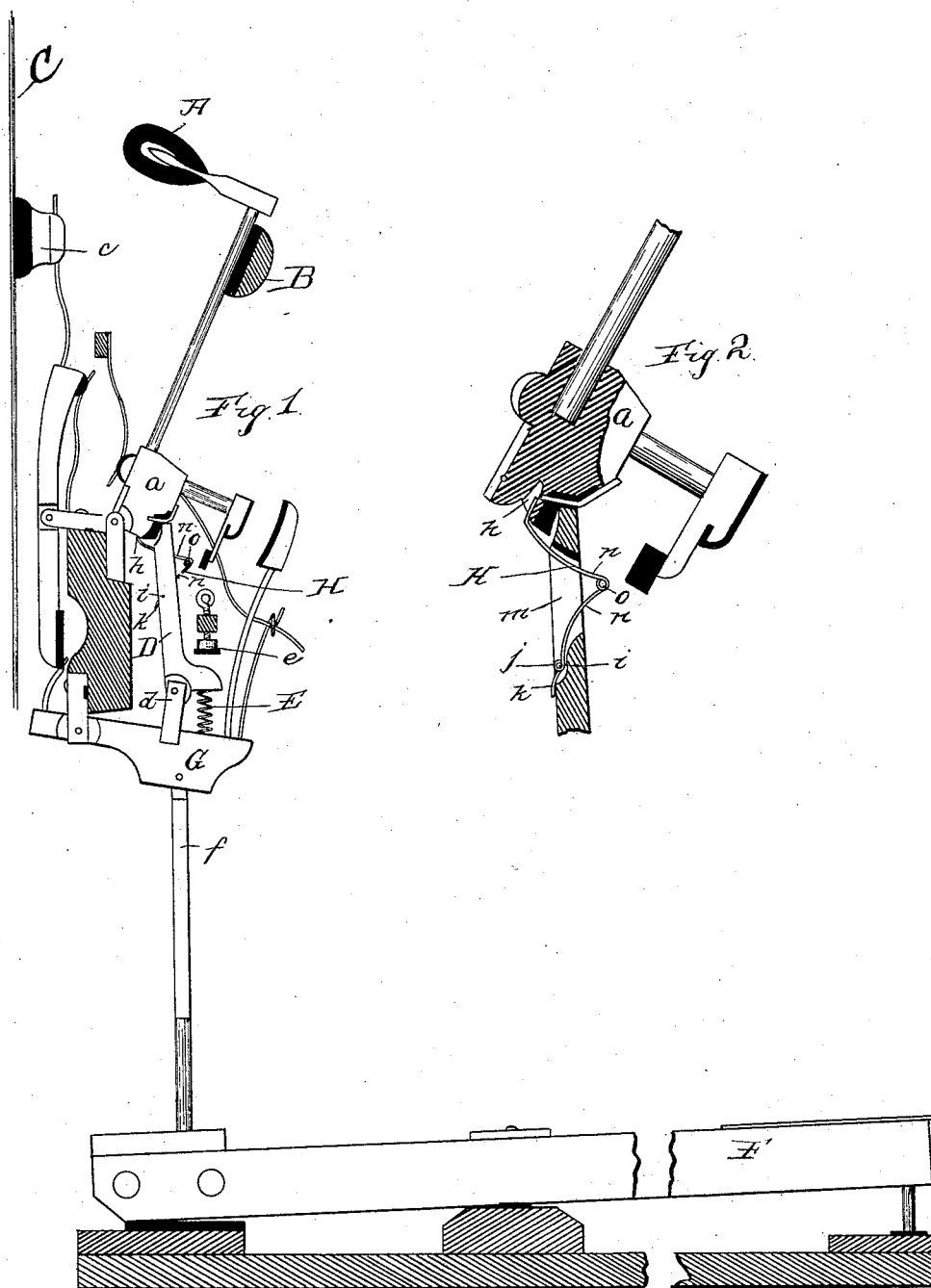
(No Model.)

S. R. HARCOURT.

PIANO ACTION.

No. 381,129.

Patented Apr. 17, 1888.



*Witnesses:*

Sew. C. Curtis.  
J. M. Munday

Inventor:

Stillwell<sup>R</sup> Harcourt.

By Munday Evans & Adcock,  
His Attorneys:

# UNITED STATES PATENT OFFICE.

STILLWELL R. HARCOURT, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE  
W. W. KIMBALL COMPANY, OF SAME PLACE.

## PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 381,129, dated April 17, 1888.

Application filed November 26, 1887. Serial No. 256,207. (No model.)

*To all whom it may concern:*

Be it known that I, STILLWELL R. HARCOURT, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Piano-Forte Actions, of which the following is a specification.

This invention is an improvement upon the quick-repeating action patented to me in Letters Patent No. 371,578, dated October 18, 1887. That invention consisted in the combination, with the hammer and jack, of a light spring let into the back side of the hammer-butt and secured upon the same side of the jack about midway of the latter.

While my said former invention worked well, it was, nevertheless, subject to the objection that the spring was inaccessible and could not be well adjusted. My design in the present improvement is to obviate this objection, and I accomplish such purpose by cutting an elongated opening in the jack above the point where the spring is secured thereto and forming an elbow-like bend in the spring, which bend projects through said opening in the jack and into position where it can be readily reached from in front of the instrument. A portion of the spring being thus exposed, any needed bend may be easily imparted to it, either to stiffen it or render it more flexible, as occasion requires.

In the drawings, Figure 1 is a side elevation of my improved action, and Fig. 2 a central vertical section of the jack and hammer-butt enlarged from Fig. 1.

In said drawings, A represents the hammer; a, the hammer-butt; B, the hammer-rest; C,

the string; c, the damper; D, the jack; d, the support in which the jack is pivoted; E, the spring under the toe of the jack; e, the stationary stop; F, the key, and f and G the parts connecting the jack with the key.

H is the spring causing the quick-repeating action. Its upper end is inserted in the butt at h, and its lower end is secured to the back side of the jack, about midway of the latter, in the same manner as in my said patent—that is, by means of a pin, i, passing through both the jack and a coil, j, in the spring; the lower leg, k, of the latter bearing upon the surface of the jack. Between the point of attachment of the spring and the upper end of the jack the latter is provided with a slot or elongated vertical opening, m, and the spring is made to project through this slot to the front of the jack by giving it an elbow-like bend, n n, and, if desired, a coil, o, at the apex of the bend. A portion of the spring is thus exposed and rendered accessible from the front of the instrument for the purpose of adjustment, which is readily effected by bending one or both the limbs n n in or out, according as the spring needs stiffening or limbering.

I claim—

The combination, with the hammer and jack of a piano-forte action, the jack having a slot, m, of the spring H, let into the butt and secured to the jack, and having an elbow-like bend projecting through the slot of the jack, substantially as set forth.

STILLWELL R. HARCOURT.

Witnesses:

EDMUND ADCOCK,  
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