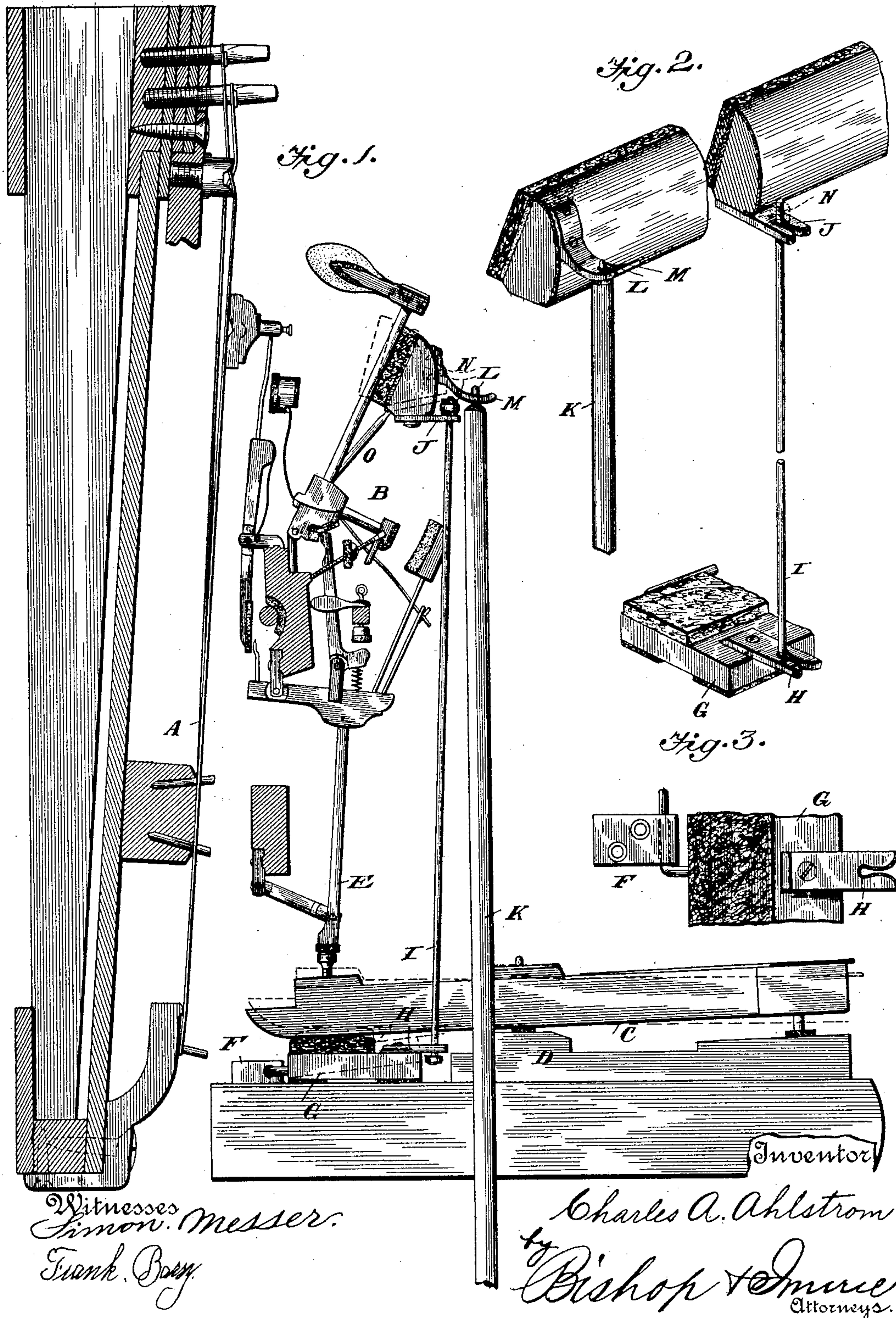


(No Model.)

C. A. AHLSTROM.
UPRIGHT PIANO ACTION.

No. 560,672.

Patented May 26, 1896.



UNITED STATES PATENT OFFICE.

CHARLES A. AHLSTROM, OF JAMESTOWN, NEW YORK.

UPRIGHT-PIANO ACTION.

SPECIFICATION forming part of Letters Patent No. 560,672, dated May 26, 1896.

Application filed June 11, 1895. Serial No. 552,384. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. AHLSTROM, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Upright-Piano Actions; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My present invention relates to improvements in upright-piano actions, and has for its object the provision of improved mechanism for producing pianissimo effects.

The invention is fully illustrated in the accompanying drawings; and it consists in certain novel features which will be hereinafter fully described, and pointed out in the claims.

In the drawings just referred to, Figure 1 is a view of an upright-piano action provided with my improvements, partly in side elevation and partly in section. Fig. 2 is a detail perspective view showing the hammer-rail, the key-lifting rail, and the operating-rods; and Fig. 3 is a detail plan view of the key-lifting rail.

Referring to the drawings particularly by letter, A designates the strings, which are secured in the usual or any preferred manner, and B designates the piano-action, the essential features of which may be in any preferred form.

The key C is supported in the usual manner on the key-rest D and actuates the sticker E of the piano-action, as will be readily understood. On the rear edge of the key-bottom I secure blocks F, to which is pivoted or hinged the key-lifting rail G, upon which the rear ends of the keys rest, as shown in Fig 1. To the said rail I secure at suitable points forwardly-projecting forks H, which are engaged by the lower ends of connecting-rods I, which extend upward and are connected to the hammer-rail by engaging forks J, projecting from the lower edge of the same. The pedal-rod K extends upward to the hammer-rail and has its upper end provided with a pin L, which engages and plays in an open-

ing in a curved plate M, secured to the upper front edge of the hammer-rail and projecting therefrom. On the ends of the connecting-rods I, above the forks J and below the forks H, I mount the regulating-nuts N, which may be adjusted to secure the proper play of the said rod and allow the proper amount of lost motion. The hammer-rail is supported in the usual manner on the hammer-rail hooks O, so as to swing in the operation of the device.

The parts are normally in the position shown in Fig. 1, with the hammer-rail in its lowest forward position and the rear end of the key depressed. When the soft pedal is operated, the pedal-rod will be pushed upward and the hammer-rail thereby swung rearward toward the strings, the hammers being thereby carried nearer the strings, so as to have a more limited stroke and produce a soft tone. As the hammer-rail swings rearward the connecting-rods I will be lifted and the nuts N on the lower ends thereof brought against the under sides of the forks on the key-lifting rail and the said rail thereby swung upward on its hinges, so as to impinge against and lift the keys, consequently raising the entire lower part of the action so as to hold the jack against the hammer-butt and thereby prevent and overcome the lost motion usually incident to this class of actions. This lifting of the keys insures a uniform touch and prevents the skipping and loss of notes which occur when the key is not in continuous positive contact with the sticker and there is lost motion between the jack and the hammer. It also insures perfect repetition in rapid playing of pianissimo passages.

My device avoids the use of projections on the pedal-rod or rocking joints in the same, so that the strength of the said rod is not impaired. I furthermore provide a direct positive connection between the hammer-rail and the key-lifting rail, so that the device responds quickly and accurately to the action of the pedal-rod, and there is no difference at any time between the throw of the key and the throw of the hammer.

Minor changes in the form or the manner of connecting the several parts may be readily made without departing from my invention.

Having thus described my invention, what

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

1. In a piano-action, having vertical strings and a horizontally-swinging hammer-rail, the
5 combination with the hammer-rail and means for swinging the same, of a key-lifting rail arranged under the rear ends of the keys, and connecting-rods having their lower ends joined to the key-lifting rail and their upper
10 ends joined to the hammer-rail.

2. In an upright-piano action, the combination with a swinging hammer-rail, and means for operating the same, of forks secured there-

to, a key-lifting rail mounted on the key-bottom and bearing against the under sides of
15 the keys, forks secured to said rail, and connecting-rods having their ends engaging the forks on the hammer and key-lifting rails and provided with regulating-nuts.

In testimony whereof I affix my signature
20 in presence of two witnesses.

CHARLES A. AHLSTROM.

Witnesses:

R. W. BISHOP,
JOHN IMIRIE, Jr.