3 Sheets—Sheet 1

C. F. T. STEINWAY.

Pianoforte Repeating Action.

No. 205,696. Patented July 2, 1878.

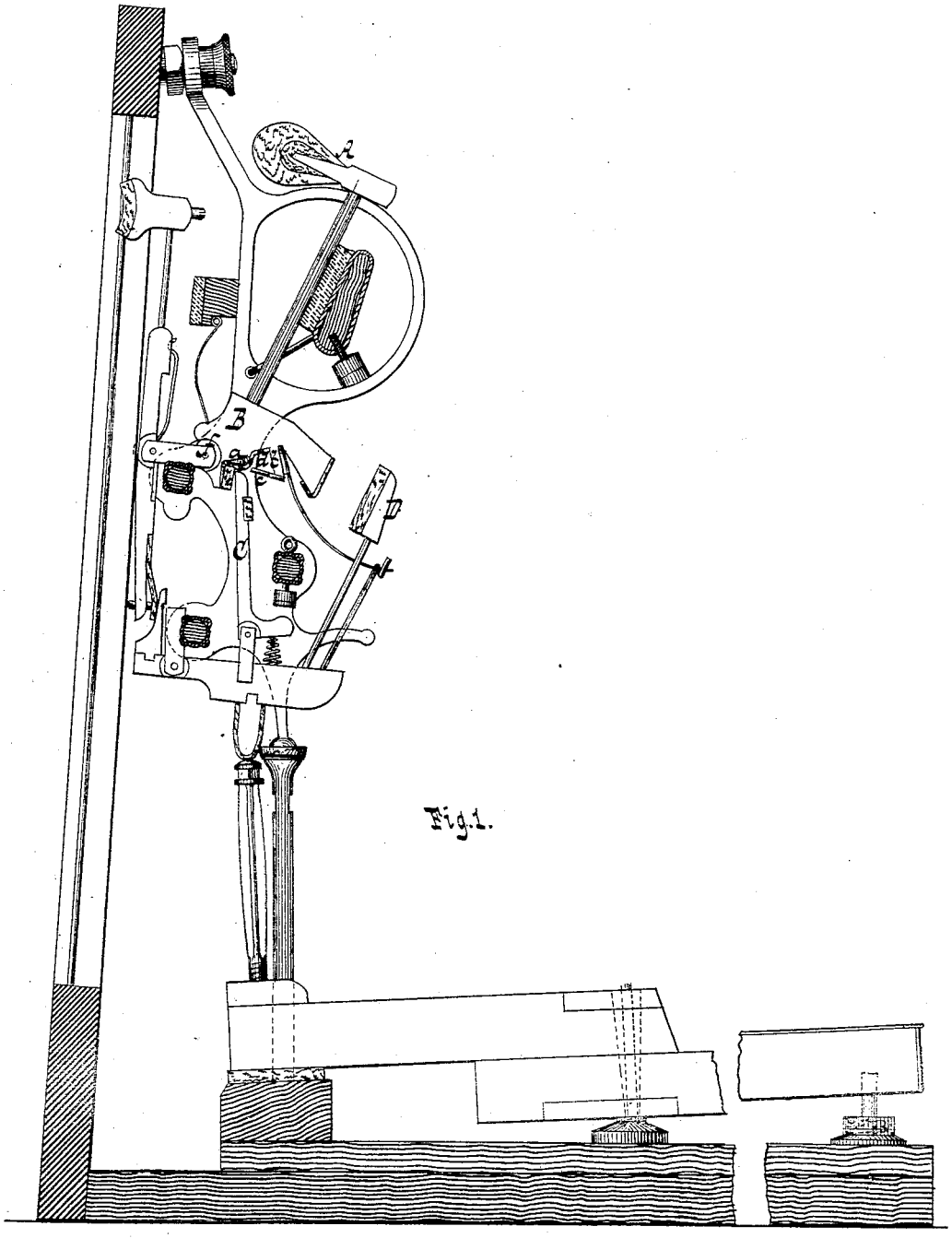

Fig. 1.

Witnesses.
Otto Hufeland
Hugo Bruggemann.

Inventor
Christian Friedrich Theodor Steinway
by Van Santvoord & Hauff
his attorneys

3 Sheets—Sheet 2

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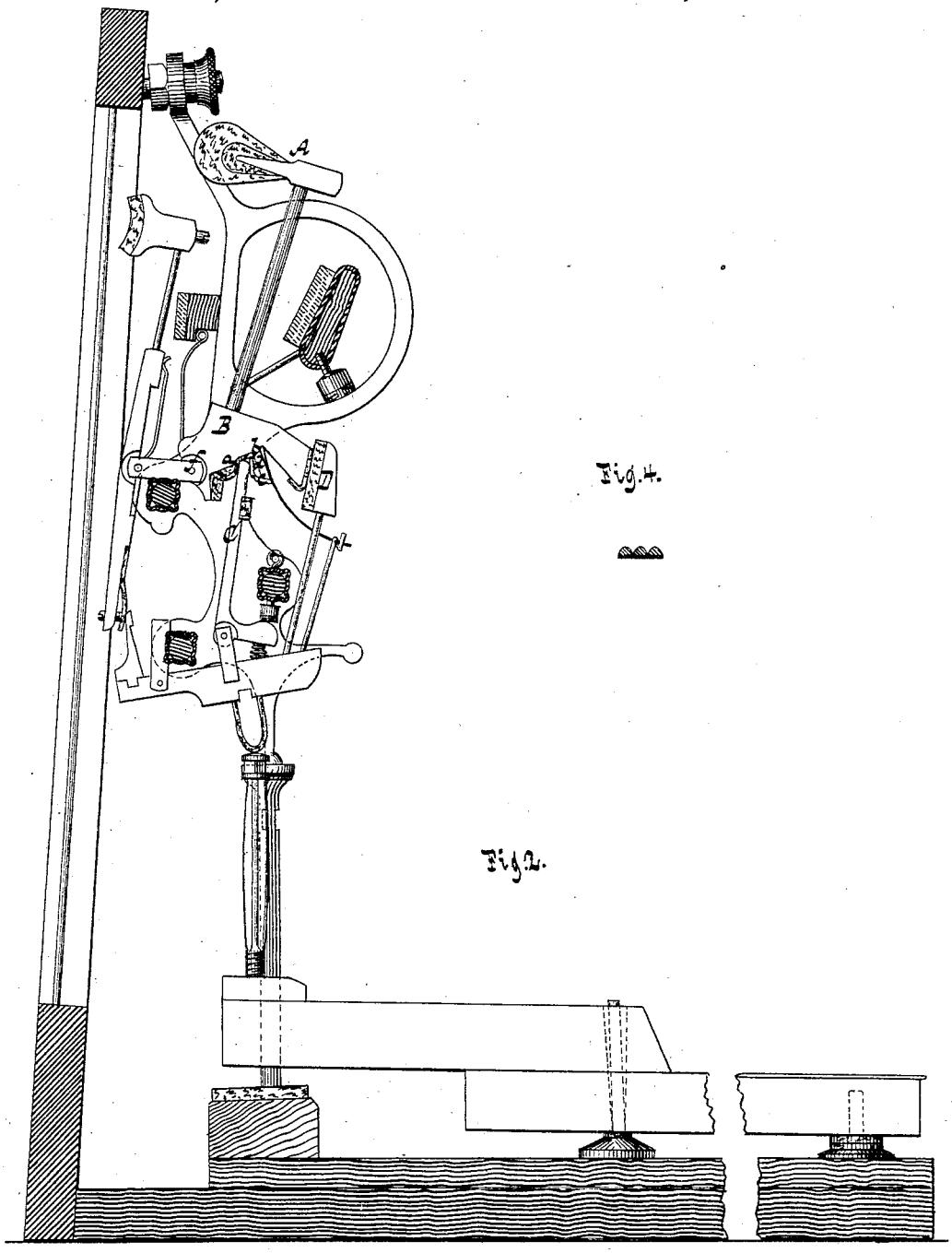

Fig. 1.

Fig. 2.

Witnesses
Otto Stupland
Hugo Brueggmann

Inventor.
Christian Friedrich Theodor Steinway.
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his attorneys

3 Sheets—Sheet 3

C. F. T. STEINWAY.

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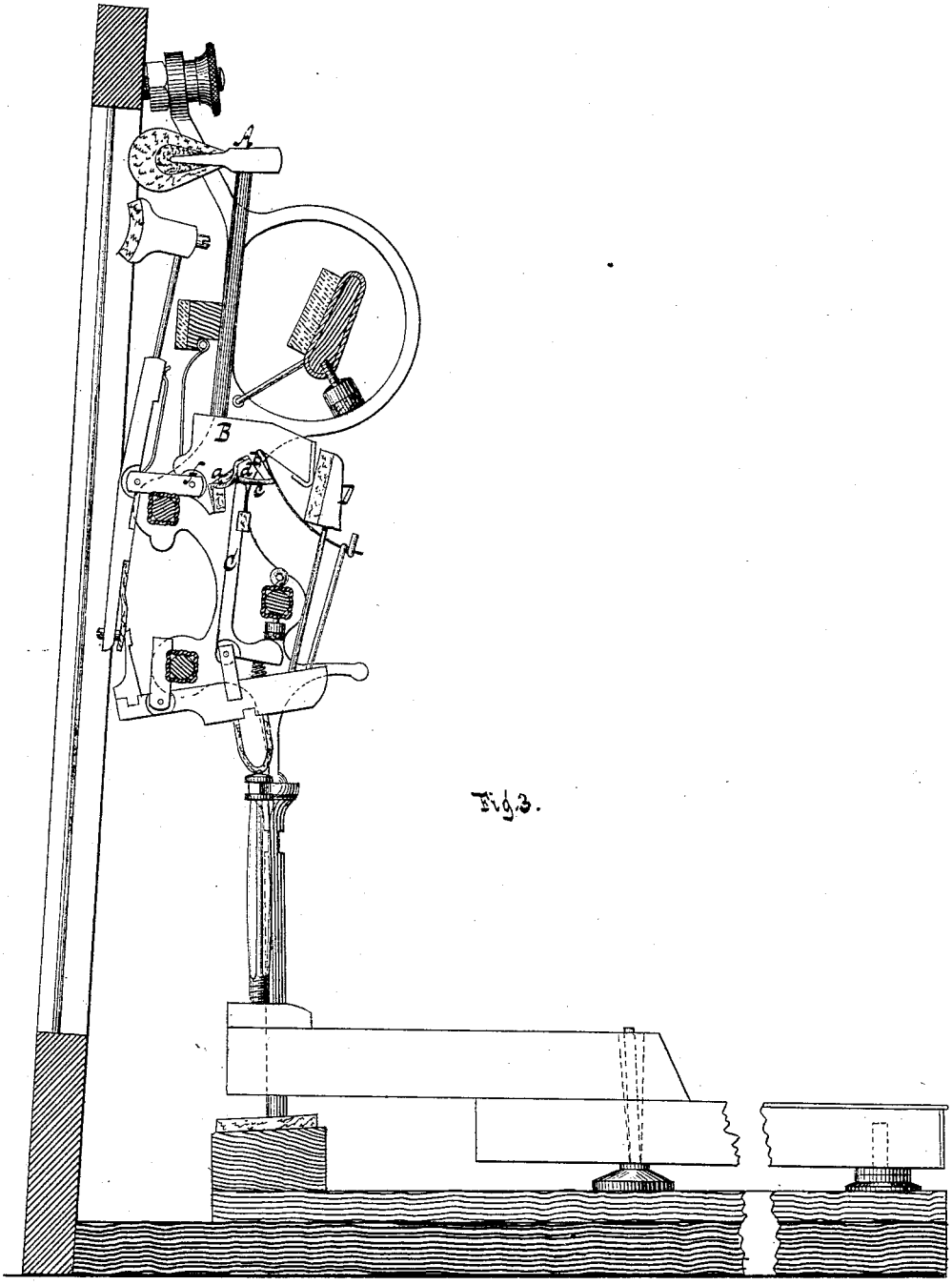

Fig. 3.

Witnesses.
Otto Stiefland
Hugo Bruggemann

Inventor.
Christian Friedrich Theodor Steinway.
by
Van Santvoord & Hauff
his attorneys.

UNITED STATES PATENT OFFICE.

CHRISTIAN F. T. STEINWAY, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND WILLIAM STEINWAY, OF SAME PLACE.

IMPROVEMENT IN PIANO-FORTE REPEATING-ACTIONS.

Specification forming part of Letters Patent No. **205,696**, dated July 2, 1878; application filed June 5, 1878.

To all whom it may concern:

Be it known that I, CHRISTIAN FRIEDRICH THEODOR STEINWAY, of the city, county, and State of New York, have invented a new and useful Improvement in Repeating-Actions for Piano-Fortes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a sectional side view of my piano-forte action when the hammer is at rest. Fig. 2 is a similar view when the key has been depressed and the hammer rebounded from the string. Fig. 3 is a similar view when the key has been allowed to rise a short distance from its lowest position. Fig. 4 is a section of the corrugated elastic tongue on an enlarged scale.

Similar letters indicate corresponding parts.

My invention consists in the combination, with the ordinary shoulder on the hammer-butt in a piano-forte action, of an extra nose and a tongue of elastic and flexible material secured directly to the end of said nose, and adapted by its own adherent elasticity to produce a continuous escapement, said parts being constructed and arranged as will be fully hereinafter set forth.

My invention also consists in the combination, with the nose projecting from the hammer-butt in a piano-forte action, of an elastic tongue, formed of corrugated india-rubber, and spanning the recess between said nose and the ordinary shoulder of the hammer-butt.

In the example shown in the drawings I have shown the action of an upright piano-forte provided with my improvement.

Many inventions have been made for the purpose of producing a quick repetition on the action of an upright piano-forte. For instance, a balance-lever has been used which can be regulated by means of springs and set-screws, and which swings on a center-pin attached directly to the hammer; but this device is objectionable on account of the rattling noise produced by the strong vibrations of the hammer.

In another invention repetition balance-levers are applied independently of the hammer, which can be done with good advantage on horizontal piano-fortes, but which becomes complicated and ineffective when applied to upright piano-fortes, since in such actions the smallest swelling or shrinking of the wood or of the leather parts is not compensated by any counter-weight, the weight in such hammers being almost evenly balanced.

My escapement is very simple and cheap. It can be readily applied to the hammer, and it is just as durable as the leather or felt mounting on the hammer.

In the example shown in the drawing, the letter A designates the hammer of an upright piano-forte, the butt B of which is provided with a shoulder, *a*, against which acts the jack C, said shoulder being covered with leather in the ordinary manner. Opposite to the shoulder *a* is a nose, *b*, which extends from the hammer-butt, and the face of which is in line, or nearly so, with a line drawn through the fulcrum-pin *f* of the hammer and through the face of the shoulder, and at such a distance from said fulcrum-pin that the shoulder *a* is about in the middle between the two.

On the face of the nose *b* is secured an elastic tongue, *c*, which extends close to the shoulder *a*, and bridges over the recess *d* between it and the nose *b*.

The tongue *c* may be made of any suitable flexible and elastic material; but I prefer to use a strip of corrugated india-rubber, the ribs of the strip being at such a distance apart that the strip on each hammer contains three ribs.

When the key is struck the jack C, by its action on the shoulder *a*, throws the hammer against the string, and as the hammer rebounds the jack, in sliding off from the shoulder *a*, bears against the loose end of the tongue *c* and forces the same back into the recess *d*, as shown in Fig. 2.

As soon as the pressure on the key ceases and the back jack D clears the hammer-butt the elastic tongue *c* assumes a horizontal position and the hammer is raised to the position shown in Fig. 3, giving to the jack C an uninterrupted escapement.

The elasticity of the tongue *c* is easily regu-

lated my making incisions into one, two, or three of its ribs, whereby said ribs are either rendered entirely inactive or their elasticity is reduced to the required degree.

By these means a continuous escapement in a piano-forte action is produced which operates without any noise, and entirely independent of the swelling or shrinking of any part of the action.

I am aware of the patent to Irving J. Harwood, dated February 12, 1861, and I hereby disclaim the construction therein shown.

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

1. The combination, with the ordinary shoulder on the hammer-butt in a piano-forte action, of an extra nose, *b*, and a tongue of elastic and flexible material secured directly to the end of said nose, and adapted by its own inherent elasticity to produce a continuous escapement, when constructed and arranged substantially as herein shown and described.

2. The combination, with the hammer-butt in a piano-forte action, of a corrugated strip of india-rubber, provided with two or more ribs, and arranged substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 3d day of June, 1878.

C. F. THEODOR STEINWAY. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.