

No. 721,666.

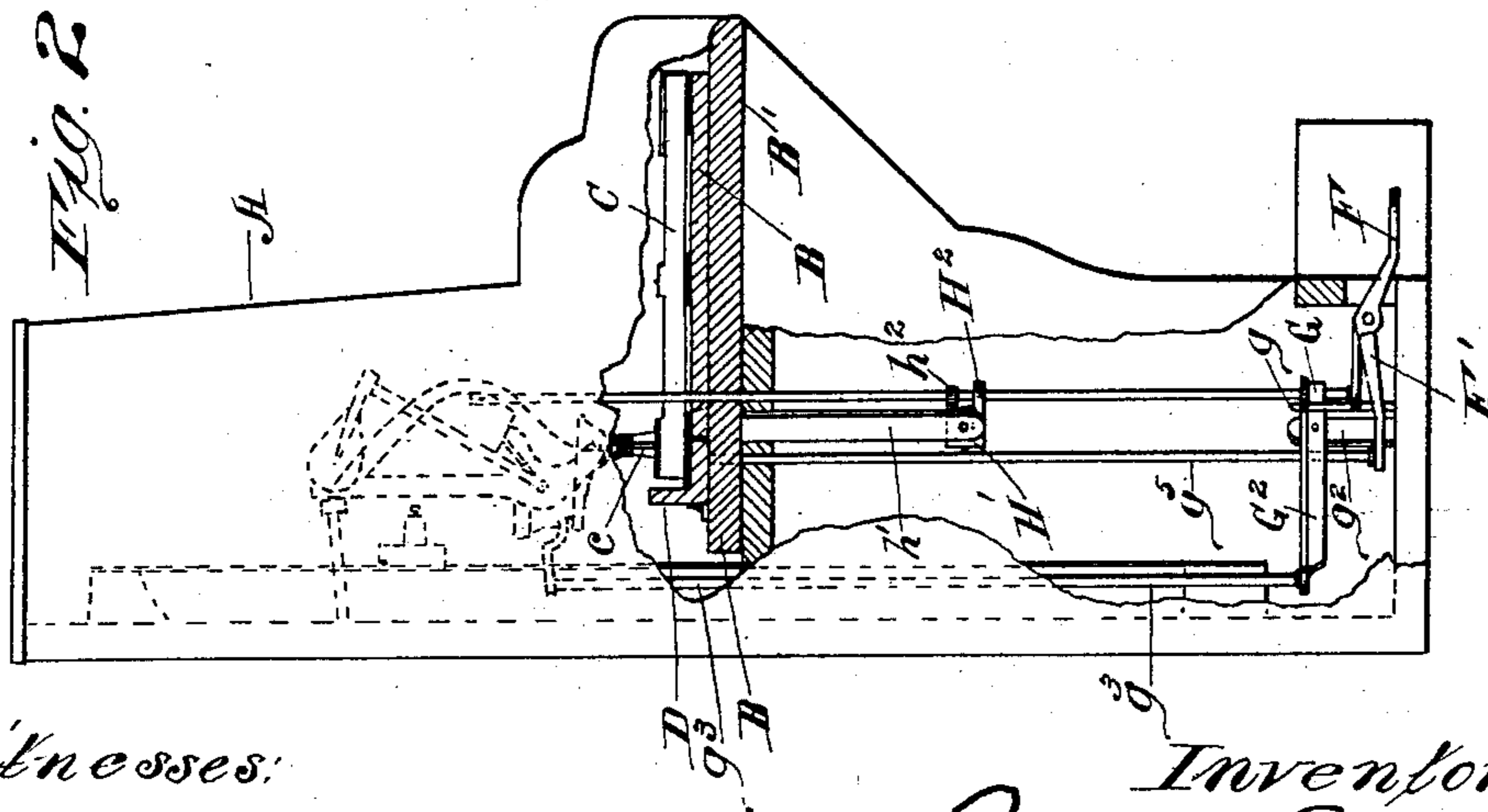
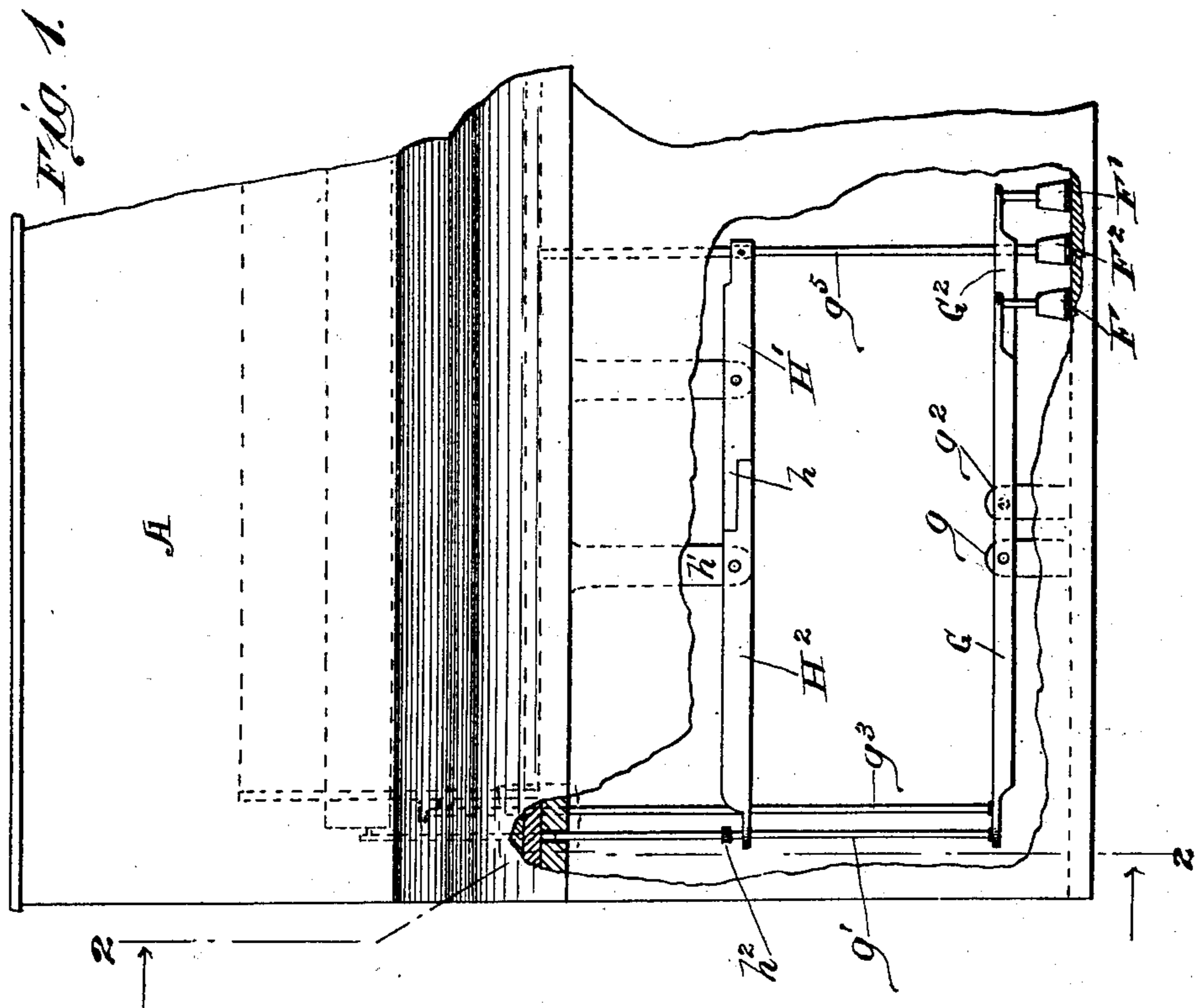
PATENTED MAR. 3, 1903.

J. H. BUTLER.
PIANOFORTE.

APPLICATION FILED APR. 10, 1901.

NO MODEL.

2 SHEETS--SHEET 1.



Witnesses:

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2 SHEETS—SHEET 2.

Fig. 3.

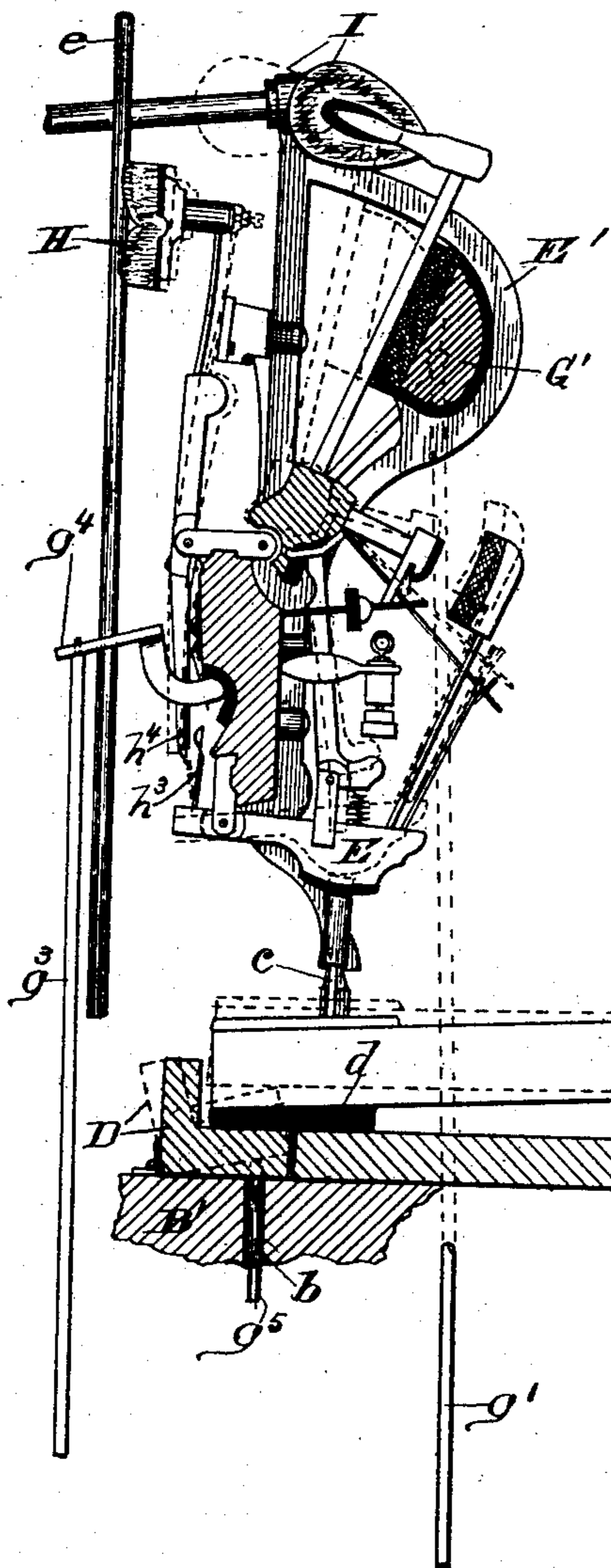
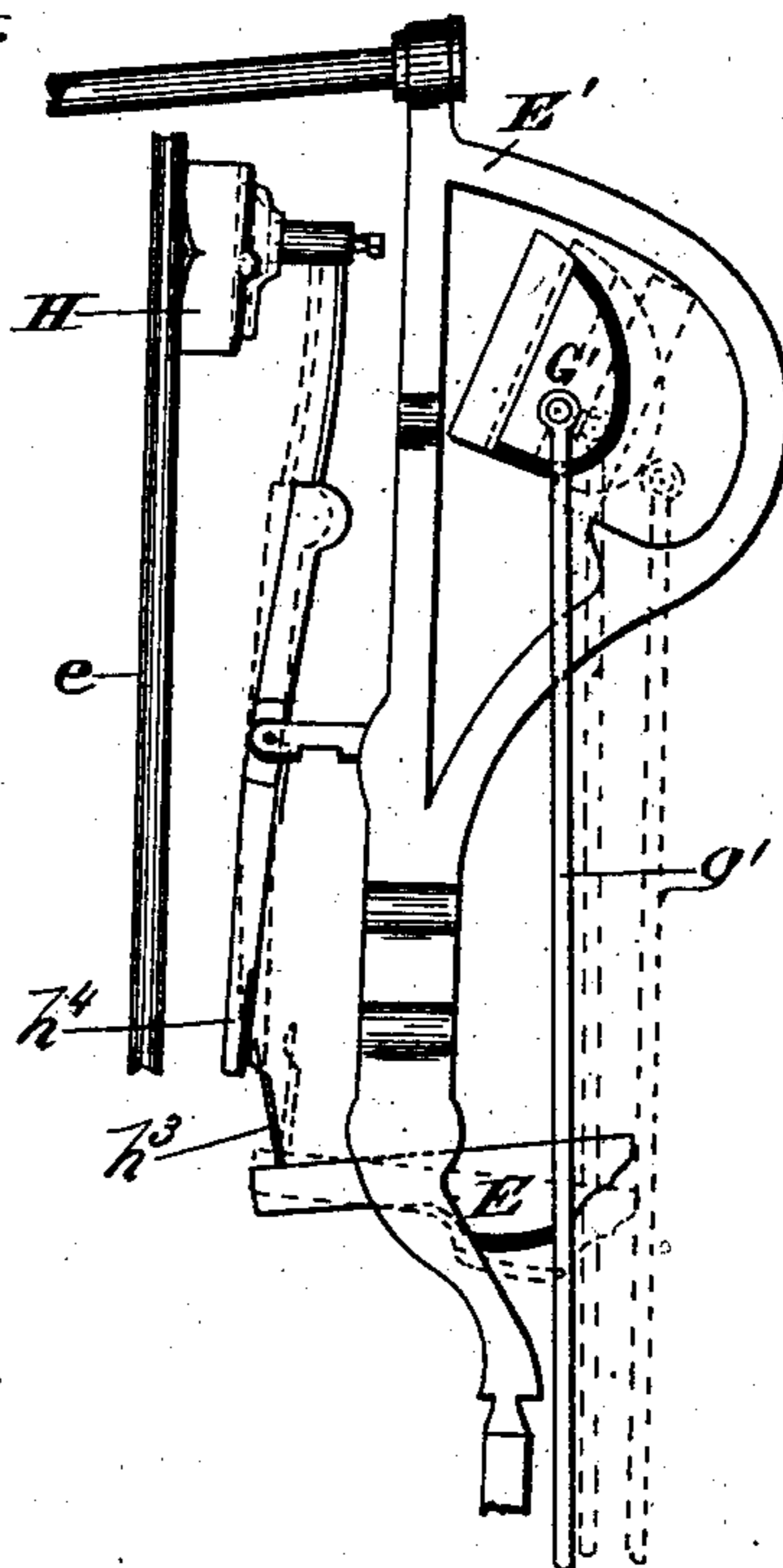


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PIANOFORTE.

SPECIFICATION forming part of Letters Patent No. 721,666, dated March 3, 1903.

Application filed April 10, 1901. Serial No. 55,117. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BUTLER, a citizen of the United States, residing at Columbia Heights, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pianofortes, of which the following is a specification.

This invention relates to the well-known or modern type of pianofortes and has direct relation to the control or regulation of the movement of the keys and certain parts of the piano-action thereof; and it consists in novel features of construction and the arrangement and operation of the various parts, as will be hereinafter more fully set forth and specifically claimed.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a front view, partly in elevation and partly in section, of a portion of a piano embodying my invention. Fig. 2 is an end view, partly in elevation and partly in section, taken on line 2 2 of Fig. 1, showing by dotted lines parts of the piano-action. Fig. 3 is a detail view, partly in elevation and partly in section, of the key-frame and action detached from the casing; and Fig. 4 is a detail view in elevation of a portion of the action, showing by dotted lines the position to which the parts may be shifted.

Similar letters refer to like parts throughout the different views of the drawings.

As my invention is applicable to pianofortes in which actions of the ordinary construction are employed and as I do not claim the action *per se* as my invention, I will refer to such parts thereof only as are necessary to give a clear understanding of the construction and operation of my improved device.

A represents the casing of the piano, in which is located a key-frame B, on which the keys C are mounted in the usual or any preferred manner. Hinged at its outer surface to a suitable support B', near the rear edge of the key-frame B, is a regulating strip or piece D, which is preferably angular in cross-section, as is clearly shown in Figs. 2 and 3 of the drawings, and rests under the inner ends of the keys. Between the regulating strip or

piece D and the keys are located pieces of felt *d* to prevent the keys from rattling. Each of the keys carries on its inner portion an extension *c*, the upper end of which impinges the wippen or fly E of the piano-action, which action is mounted on suitable brackets E', located within the casing near the strings *e*, which may be arranged and supported as usual.

Pivotaly located in the lower portion of the casing are the pianissimo-pedal F, the forte-pedal F', and another pedal F², the latter being used to raise the regulating-strip D, as well as to shift the position of the hammer-rail. Fulcrumed on a suitable support *g* in the lower portion of the casing A is a lever G, which is connected at one of its ends to the inner portion of the pedal F and has at its other end an upright rod or bar *g'*, which is pivotaly secured at its upper end to the hammer-rest rail G', as is clearly shown in Fig. 4 of the drawings. Fulcrumed on a suitable support *g*² in the lower portion of the casing A is a lever G², which is secured at one of its ends to the inner portion of the pedal F' and has at its other end an upright rod or bar *g*³, which is connected at its upper end to a lever *g*⁴, used for releasing the dampers H from the strings. Connected to the inner portion of the pedal F² is a rod *g*⁵, which passes through a suitable opening *b* in the support B' or which may be otherwise guided and has its upper end resting against the lower surface of the regulating-strip D, near the front edge thereof. Pivotaly secured at one of its ends to the rod *g*⁵ is a bar H', which is provided at its other end with a rabbet *h* to engage one end of the bar H², which is fulcrumed on a suitable bracket *h'* and engages at its other end the rod *g'*, which is provided just above said bar with a projection *h*², with which the bar H² will contact when the pedal F² is pressed down, thus throwing the hammer-rest rail still nearer the strings.

From the foregoing and by reference to the drawings it will be readily understood and clearly seen that by pressing the outer portion of the pedal F² downwardly the rod *g*⁵ will be raised, thus turning the regulating-strip D for the keys, so as to raise the parts to the positions shown by dotted lines in Fig.

3 of the drawings, in which operation the damper-spoon h^3 on the wippen E will be thrown into contact with the damper-rod h^4 , thus decreasing the pressure of the damper
 5 on the strings and at the same time moving the hammer-rest rail and hammers I nearer the strings and shortening the throw of the hammers. This is effected through the medium of the bars H' H^2 and rod g' , for it will
 10 be understood that when the bar H' is raised by means of the rod g^5 its end connected to the bar H^2 will cause the opposite end of said bar to rise and carry with it the rod g' through its engagement with the projection h^2 thereon.
 15 In the above-described operation it will be observed and understood by reference to Fig. 3 of the drawings that the inner portions of the key C will be raised and the outer portions thereof correspondingly lowered, thus
 20 shortening their strokes, and, as the extensions c are held in contact or close to the wippens or flies E, that the keys will have a uniform tension, thus taking up the lost motion of the keys and shortening the touch or
 25 the stroke thereof.

Having thus fully described my invention,

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

In a pianoforte, the combination with the casing containing the usual wires and hammers, a piano-action therein, the hammer-rest rail with the pianissimo-pedal and the rod connecting them, and the individual dampers for the wires; of the keys, extensions on their inner ends standing beneath the wippens, spoons on the latter adapted to engage the damper-rods, a pivoted regulating-strip standing beneath the inner ends of all the keys, a pedal and rod for raising this strip, a projection on the rod of the pianissimo-pedal, and a series of pivoted bars connected with the rod of the third pedal and disposed under said projection, whereby depression of this pedal will simultaneously shorten the stroke of all the keys, shorten the throw of all the hammers, and decrease the pressure of all the dampers.

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Witnesses:

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