(No Model.) 2 Sheets—Sheet 1.

G. T. CRAIG.

MUSICAL INSTRUMENT.

No. 569,707. Patented Oct. 20, 1896.

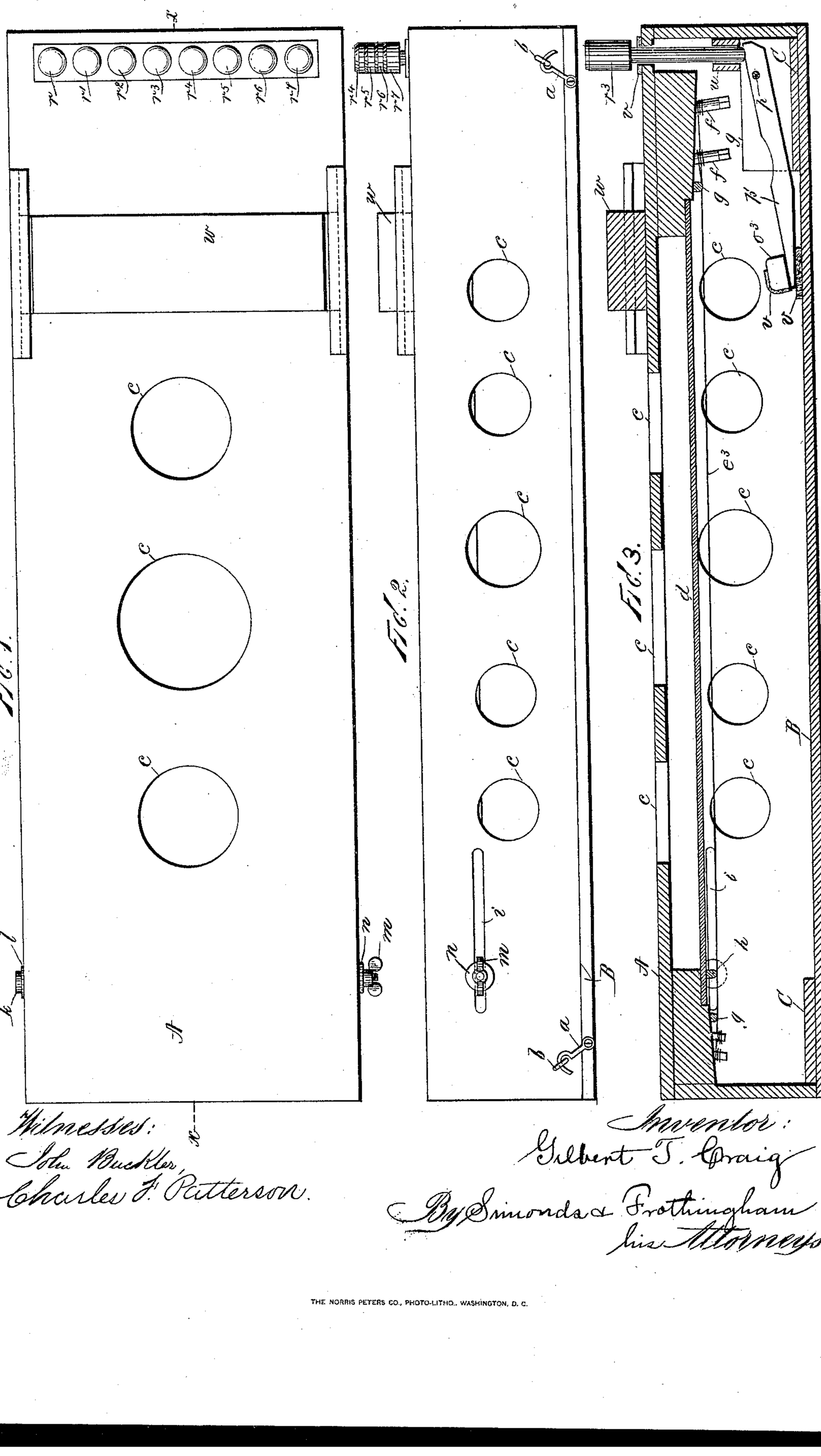

FIG. 1.

FIG. 2.

FIG. 3.

Witnesses:
John Buckler,
Charles F. Patterson.

Inventor:
Gilbert T. Craig
By Simonds & Frothingham
his Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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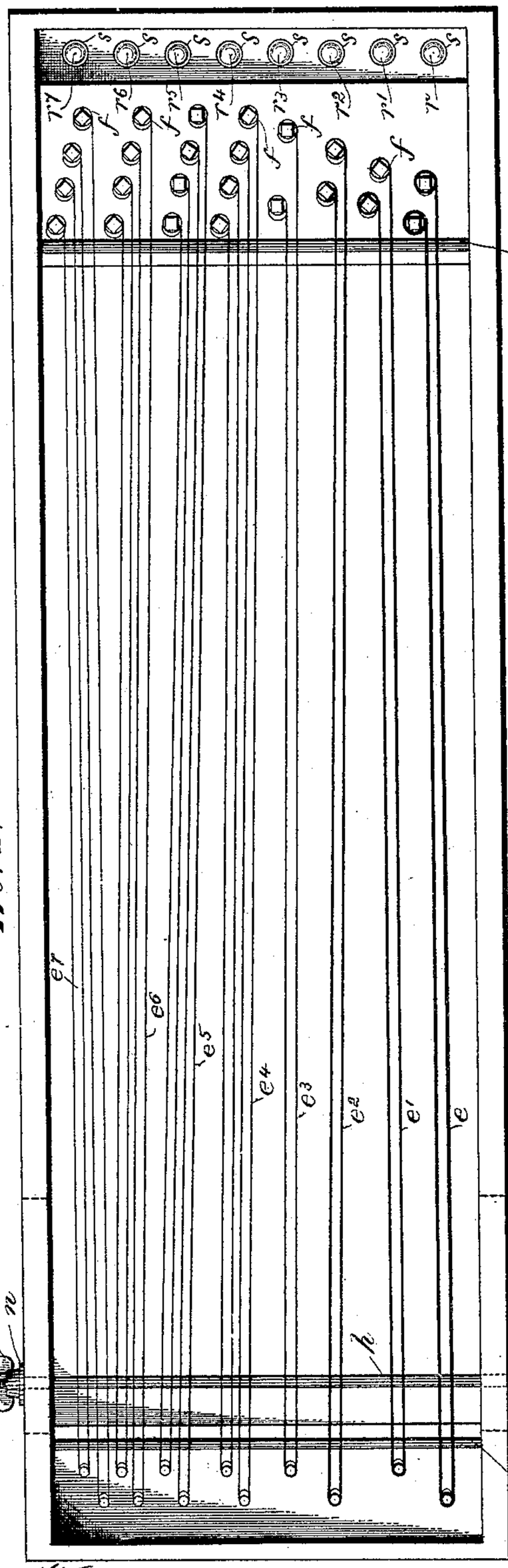

FIG. 4.

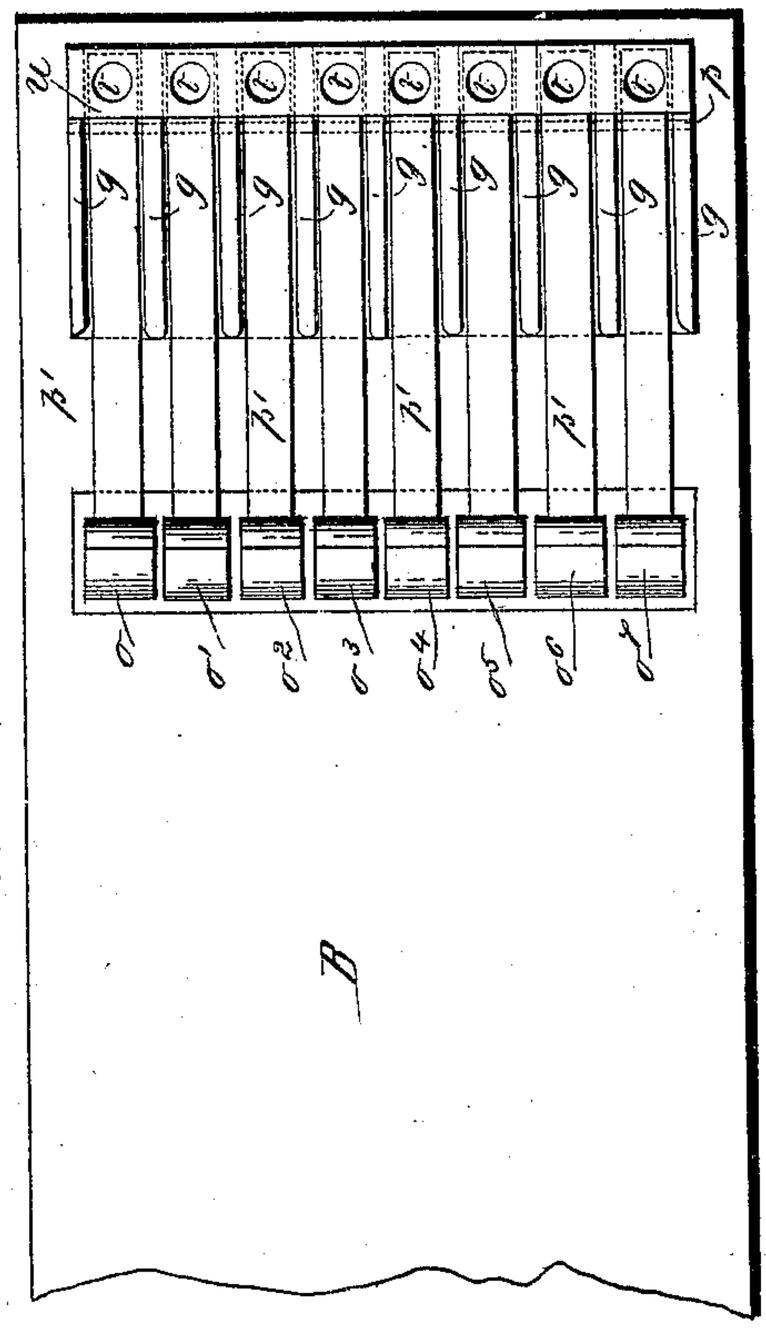

FIG. 5.

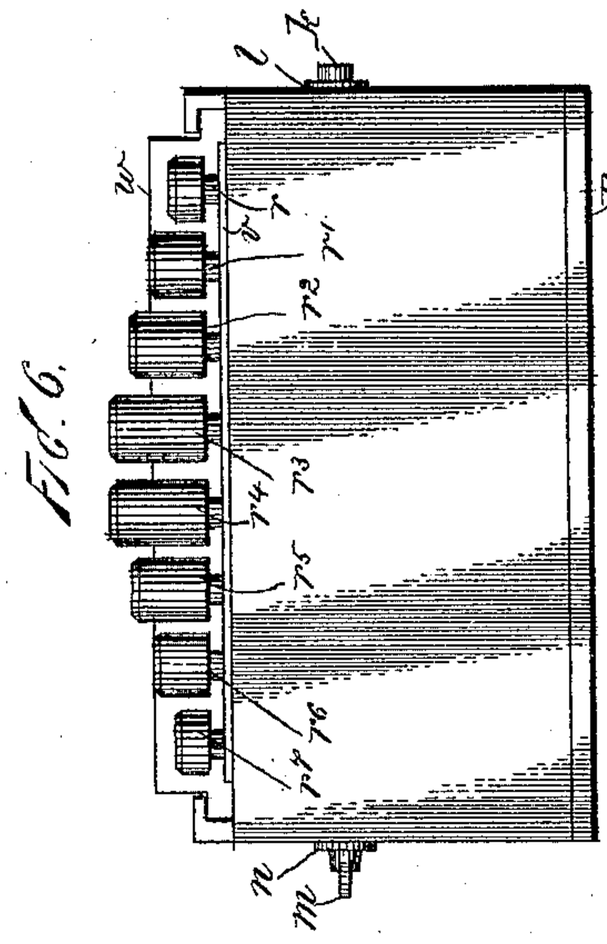

FIG. 6.

Witnesses:
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Charles F. Patterson

Inventor:
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UNITED STATES PATENT OFFICE.

GILBERT T. CRAIG, OF NEW YORK, N. Y., ASSIGNOR TO ROWLAND H. MAYLAND AND J. HOWARD FOOTE, OF BROOKLYN, NEW YORK.

MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 569,707, dated October 20, 1896.

Application filed April 29, 1895. Serial No. 547,436. (No model.)

To all whom it may concern:

Be it known that I, GILBERT T. CRAIG, a citizen of the United States, residing at New York, in the county and State of New York, have invented a certain new and useful Improvement in Musical Instruments, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to a musical instrument especially adapted to the playing of accompaniments, and its principal object is to provide an instrument which may be operated by the foot and thus enable a person to play his own accompaniment while playing at the same time, for example, a mandolin or other instrument. This instrument may properly be called a "pedal harp."

The invention consists in the novel features of construction hereinafter described and set forth, and more particularly pointed out in the claims hereto appended.

Referring to the drawings, Figure 1 is a plan view of the instrument. Fig. 2 is a side view. Fig. 3 is a section through the line $x\,x$ of Fig. 1. Fig. 4 is a plan view of the under side of the top part of the instrument. Fig. 5 is a plan view of a portion of the bottom part, and Fig. 6 is a right-hand end view.

Like letters denote like parts throughout the several views.

The above figures of drawings show only eight sets or groups of vibratory strings and their appurtenances; but it will be readily understood that the series can be extended to any desired reasonable extent and may be attuned to any desired key or keys.

The letters A and B denote, respectively, the top and bottom parts of the instrument, the top part being fitted over cleats C C, secured to the bottom part, and the two parts held together by means of the hooks and eyes a and b on both sides and near each end of the instrument. The instrument can thus be readily taken apart by simply unhooking the hooks from the eyes and lifting the top from the bottom.

$c\,c$ denote sound-holes in the sides and top.

d is the sounding-board.

$e\ e'\ e^2\ e^3$ denote the bass vibrating strings, and $e^4\ e^5\ e^6\ e^7$ denote sets or groups of vibratory strings tuned in any desired musical ratios. $f\,f$ are the tuning-keys. These strings rest upon the stationary bridges $g\,g$.

h is a movable bridge, the ends of which are adapted to slide in the slots $i\,i$. One end of said bridge terminates in a non-movable nut k and washer l, and the other end is provided with a thumb screw or nut m and washer n or their known equivalents. This construction enables me to change the key of the instrument by sliding the bridge to the desired point in the slots $i\,i$ and fastening it at that particular point by means of the thumb screw or nut.

$o\,o'\,o^2\,o^3\,o^4\,o^5\,o^6\,o^7$ denote the hammers adapted to strike upwardly against the strings, as hereinafter mentioned. These hammers swing on the pivot p, which consists of a wire rod extending through the hammer-levers p' and the blocks $g\,g$, fastened to the cleat C. In Fig. 3 one of the hammers is shown in its normal position.

$r\ r'\ r^2\ r^3\ r^4\ r^5\ r^6\ r^7$ denote pins, each consisting of an enlarged upper portion, which may be properly called the "head," and a lower portion. The lower portions are substantially of equal length and pass downwardly through the holes $s\,s$ in the top part A and also through the holes $t\,t$ in the block u, which latter is securely fastened to the blocks $g\,g$. The lower portions of these pins in their normal position rest lightly upon the hammer-levers, as shown in Fig. 3. The upper portions or heads of these pins vary in length, as shown in Figs. 2 and 6, and form, as shown, an "ascending" and "descending" step, so to speak. The upper portions or heads of the outer pins r and r^7 are of substantially the same height, the pin r being adapted, when depressed, to cause the hammer o to strike the bass string or strings e, and the pin r^7 being adapted, when depressed, to cause the hammer o^7 to strike the strings e^7, comprising the set or group of strings forming a chord of which e is the bass note.

The upper portions or heads of the pins r' and r^6 next to the outer pins are of substantially the same length and a little longer than the heads of the outer pins. The upper por-

tions of the pins r^2 and r^3 are a little longer than those of the pins r' and r^6, and those of r^3 and r^4 are the longest.

For the purposes of illustration the strings designated by the letters $e\ e'\ e^2\ e^3$ denote bass-strings, and the strings e^4, e^5, e^6, and e^7 each represent, say, the third and fifth notes of certain chords of which the said strings e, e', e^2, and e^3 are respectively the bass notes. The hammers $o\ o'\ o^2\ o^3\ o^4\ o^5\ o^6\ o^7$ are respectively adapted to strike the strings $e\ e'\ e^2\ e^3\ e^4\ e^5\ e^6\ e^7$ in manner aforesaid.

The pins $r\ r'\ r^2\ r^3\ r^4\ r^5\ r^6\ r^7$ are respectively adapted to operate the hammers o, o', o^2, o^3, o^4, o^5, o^6, and o^7.

The object in having the upper portions of the sets of pins of unequal length, as shown, is to enable the performer to strike the sets or groups of strings as he may desire to form certain chords with their respective basses. If these upper portions were of equal length, it would be impossible for him to strike the chord or chords represented, for example, by the two middle pins without striking some part of the next and different chords. There would be no certainty of striking the desired chord unless the upper portions of the pins were of unequal length, as above indicated. By this construction the performer is enabled to change from one set of pins to another without clashing with any other set or sets of pins.

v denotes strips of leather or other suitable material for deadening the sounds of the mechanism of the instrument. w denotes a foot-rest adapted to slide lengthwise on the top to accommodate the different sizes of feet.

When in use, the instrument is placed upon the floor and the performer places both feet upon the foot-rest and depresses with his foot or feet the pin or pins designed to cause the hammer or hammers to strike the desired string or group of strings or chords. When either pin is thus depressed, the lever end of the hammer is also depressed, which causes the hammer to be raised and to strike the desired string or group of strings. When pressure upon either pin is released, the hammer drops of its own weight and assumes the position shown in Fig. 3 and raises the pin, as shown in said figure, in position to be depressed again, if desired. The downward movement of the pins is limited by the head of the pin coming in contact with the top of the instrument, thereby only allowing the lower portion of the pin to move downwardly just far enough to cause the hammer to strike the string or strings.

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

1. In a musical instrument of the character described, the combination of a set of vibratory strings, hammers for striking said strings normally not in contact with said string and pins r, r', &c., the upper portions of which form a series of steps, whereby the operator is enabled to strike one set of strings without danger of striking another set of strings, substantially as described.

2. In a musical instrument of the character described, the top part A, a vibratory string, a pin located in said top part, the bottom part B and a hammer located in said bottom part and adapted to strike said string when the said pin is depressed, said parts A and B being detachably connected, substantially as described and for the purposes specified.

3. In a musical instrument of the character described, the top part A, sets of vibratory strings, pins having their upper portions arranged in the form of a step or steps, located in said top part, the bottom part B and hammers located in said bottom part and adapted to strike said strings, when the pins are depressed, whereby the operator is enabled to strike one set of strings without danger of striking another set of strings, said parts A and B being detachably connected, substantially as described.

In testimony whereof I have hereto affixed my hand, this 16th day of April, 1895, in the presence of two witnesses.

GILBERT T. CRAIG.

Witnesses:

N. L. FROTHINGHAM,

CHARLES F. PATTERSON.